Joseph Moxon.
Born at Wakefeild August
the 8th Anno 1627.

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Mathematicks made Easie:

Or, a Mathematical

DICTIONARY.

EXPLAINING

The Terms of Art, and Difficult Phrases used in *Arithmetick*, *Geometry*, *Astronomy*, *Astrology*, and other *Mathematical Sciences*.

Wherein the true Meaning of the word is Rendred, the Nature of Things signified Discussed, and (where Need requires) Illustrated with apt Figures and Diagrams.

With an *APPENDIX*, exactly containing the Quantities and Parts of Weights and Measures; The Characters and Meaning of the Planets Symbols, or Abbreviations commonly used in *Algebra*. And Sundry other Observables.

By *Joseph Moxon*, a Member of the Royal Society, and Hydrographer to the King's most Excellent Majesty.

The Second Edition, Corrected and much Enlarged by *Hen. Coley*, Teacher of the Mathematicks in *Baldocks Gardens*.

LONDON,

Printed for *J. Moxon*, at the Sign of *Atlas* in *Warwick Lane*. M. DC. XCII.

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[illegible] Society, [illegible] Majesty.

[illegible] Enlarged by [illegible] Lecture.

LONDON:

Printed for [illegible] at the Sign of [illegible] in Warwick Lane. M.DC.[illegible]

To the Honourable

CHRISTOPHER SEATON,

Brother to the Right Honourable

GEORGE Earl of *Winton*, &c.

This small (but useful) Treatise, is most humbly

DEDICATED,

Sir,

THE Excellency of your *Knowledge* in all kind of Learning in General, and in Particular, that of the *Mathematicks*, hath emboldened

denid me to the Presumption of Affixing your Worthy Name, as *Patron* to this Work; It was above twelve years since this Book was first Compos'd by my Father, and then Dedicated to a Noble *Patron* of this Nation; who are both Deceased: And now this Second Edition being Enlarg'd, Corrected, and Improv'd, I hope Sir! you will not impute it as a Crime in me, that I take this Boldness (being incouraged thereunto by your (constant Love and Favour) to Shelter it

for Protection under your Worthy Name. I hope, I need not doubt of your continued Friendship and Incouragement.

The Design of this *Treatise*, is to Inform Young Students in those hard *Terms* of *Art* used in the *Mathematicks*, and those *Laudable Arts* appertaining thereunto; and it may be Reasonably hoped, that it will be serviceable also to many Persons that have already made Considerable Progress in those Studies: which in themselves are not only Difficult, and

therefore require a Tutor, but they are unlimited, for no man hitherto did ever arrive to a *ne plus ultra* therein.

I need not tell you, Sir! that the *Mathematical Arts* are grounded only upon those two main Pillars, *viz.* *Arithmetick* and *Geometry*, and thence are Deduced, and Demonstrated, those we call *Mixed Mathematicks*, As *Astronomy*, *Navigation*, *Surveying*, *Dyalling*, *Opticks*, *Fortification*, and many other curious *Arts*. Now since all the World cannot but freely acknow-

ledge, not only their Excellency but Utility, therefore they are no less worthy of the Study and Industrious Acquirements of all true Lovers thereof, which will be Advantagious, not only to themselves, but to the Publick, as might be copiously Illustrated.

But worthy Sir! not to give you farther trouble, I humbly crave your Generous Acceptation of this *small Treatise*, which if I obtain, I shall then conclude it a Sufficient Protection, both of this Work

and my self, from all *Ill-affected*, and *Carping Critticks*, and may boldly adventure this *little Bark* into the wide Ocean of the World, without the least danger of *Ship-wrack*, and *Ruine*, and thus I shall ever Remain

Honourable Sir!

your most humble

and obliged Servant

James Moxon.

TO THE READER.

TO Expatiate in Encomiums on the Mathematicks, were to Gild Gold; an Undertaking vain and impertinent. This sort of Learning has sufficiently justified its Excellency, both from the Certainty of its Principles, and Usefulness of its Practise, to all Ingenuous Men.

Nor had the number of its Votaries been so few as they are, had not the difficulty of the Terms (some Arabick, most Greek, and divers of them Latine, according as they have been derived to us from the most Learned of those

those respective Nations, in several Ages) deterr'd many of great Natural Parts from wading into its Mysteries, or at least clouded its ravishing Beauties from their Eyes.

To remedy this, and at once promote such Praise-worthy and advantagious Arts, and serve the young Students therein, I have taken the pains to Collect and Explain the Hard Words, Difficult Terms, and Abstruse Phrases used by Authors; in all the several Mathematical Sciences, and Branches depending thereupon, that which, nothing has hitherto more discouraged hopeful Tyro's from Proficiency.

But here is offered them a Key, that will open to them the Closest Recesses of Urania, and her Sublunary Handmaids. Nay, We have taken care to demonstrate the Nature of the Things, as well as genuine Sence of the Words; and to rivet them in the

Under-

Understanding, have accommodated the Senses with Demonstrative Diagrams, where they are requisite.

If any useful Terms have escaped our diligence, let the Reader consider the Nature of the Work, impossible to be begun and perfected at once: for we were forced to trace an almost Untrodden Path.

If any Errors have been committed in the Interpretation (as who in such variety dare pretend to a full and perfect understanding how, and in what sence every Author hath used a Word) the Incapacity of Judgment, or Defect of Memory be pardoned, the zealous Intent will for propagating of Arts be encouraged, which was never more cordially designed than in this Work. But the performance is submitted to the Charity of thy Censure.

A main thing which induced me to this Undertaking, was from Experience,

ence how much such a Work was wanting? For about thirty years ago, when I first began to apply my self to Mathematical Learning, I found my self not a little perplex'd with the difficult Terms used by Authors, and therefore then began to Collect such hard Words as I met with, that I might either by my Reading, or Enquiry by some of my Mathematical Acquaintance, learn to know the meaning of them. Which have I ever since been storing up Words and their Interpretations, with Memorandums in what Book and Page I might find their Definitions or Explanations, against I should be ready to digest them into an Alphabetical Method; which at last (though long first) I did, and intended then speedily to have finished this Book. But finding my self encumbred in many other Concerns, I considered the Task would be too tedious for me to run through alone,

alone; and therefore desired the assistance of my good Friend, Mr. H. C. by whose pains it is at last arrived to what you see.

It is true, that since this was, as aforesaid, Collected, I did light on Vitalis, a French Author, Printed in Latin; and by comparing my Collections and his Book, I found I had gathered more Words purely Mathematical, than he had done: But he hath indeed inserted the Names of most Stars, and upon them made somewhat long Discourses, which, before I saw his Book, I had also Collected: But upon consideration, that it would make this Book swell beyond its intended Size, and what they would prove of small use to English Beginners, I left them out.

Having given thee this Account, it only remains to advertise thee a word or two for thy better apprehension of the scope of the Book.

First,

To the Reader.

First, Consider, 'Tis intended for Beginners, not Accomplish'd Artists, therefore adapted to the meanest Capacities; preferring sometimes a Plain, Familiar, and Intelligible Description, before a Rigid, Abstruse (though Exact) Definition: Nay, rather (though rarely) venturing upon a Repetition, than running the Hazard of not being understood.

Secondly, Observe, We have in most places hinted the Derivation of the Word, which both assists the Memory, and informs the Understanding: Yet have put the Greek *words in* English *Characters; for those that understand* Greek *know them well enough now; but those that do not, could not perhaps have read them otherwise, so much as to have perceived any Analogy between them and the Words, we say, owe their Original to them.*

Thirdly, The Letter G. *or sometimes*

Gr. *shows the Word Originally* Greek; *and* L. *or* Lat. Latin. *And what is included between these two* [ ] *Crotchets, is the natural, strict, and proper Signification of the Word; what follows is the Mathematical Acception: and in that where I have been forc'd to use any hard Word, I have explain'd it by another Synonimous (of the same signification) in a Parenthesis immediately following.*

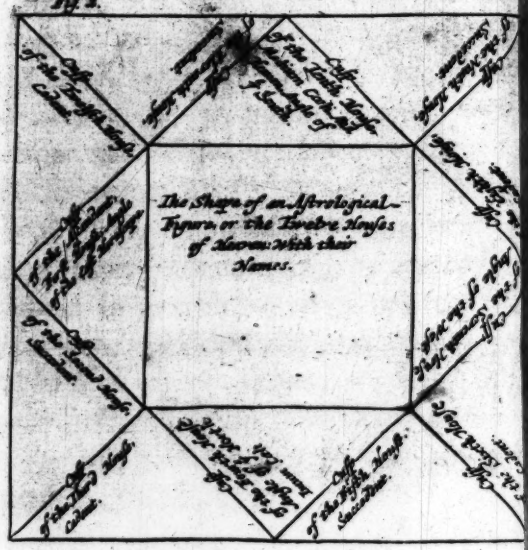
Lastly note, That there are many strange and Forreign words *used by some* Mathematical Authors, *which might as well be exprest in plain* English words; *for they cannot be accounted* Mathematical Terms, *but are either* Latine *or* Greek, *or what other Language the Author affects to express some common Meaning in, which words should be sought in their proper* Dictionaries; *it being my Purpose and Design in this Book, fully*

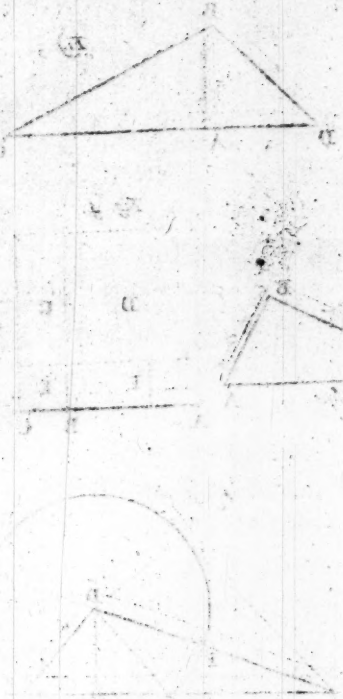
to

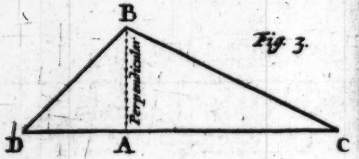
to Explain such useful Mathematical words frequent in most Authors that Treat of any part thereof, for which as yet no English Terms are Accepted; and where I want their Explanation at Large, I thought necessary to Refer the Reader to the Authors themselves frequently in use, and such as most Students have by them: now in this Second Edition, the first Author being deceased, here is by another Hand (according to the Author's Request in his Lifetime) all other useful words Added, as could at present be thought off, that were Omitted in the first Impression, to make it the more useful and compleat for the young Mathematician's use.

Vale.

Fig. 2.


The Shape of an Astrological Figure, or the Twelve Houses of Heaven: With their Names.





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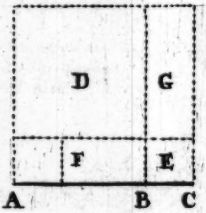

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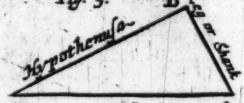

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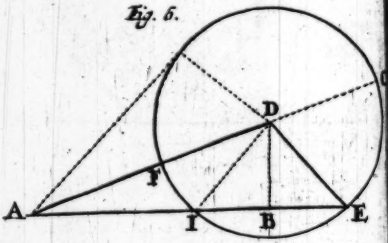


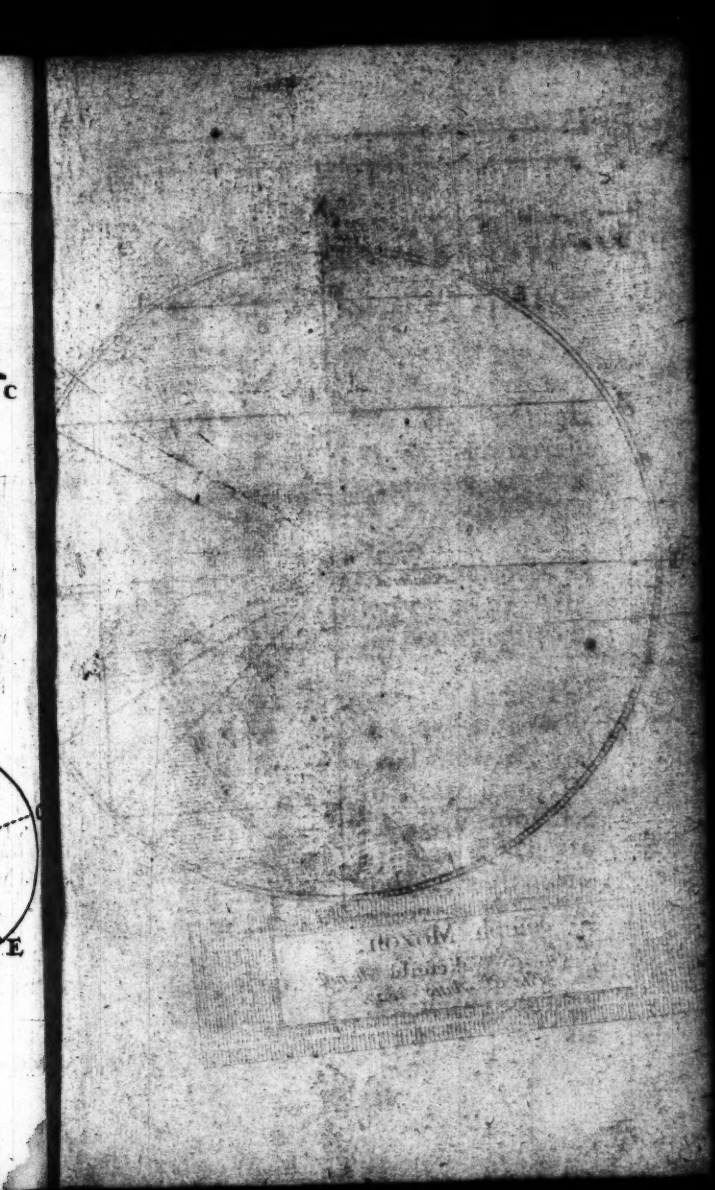
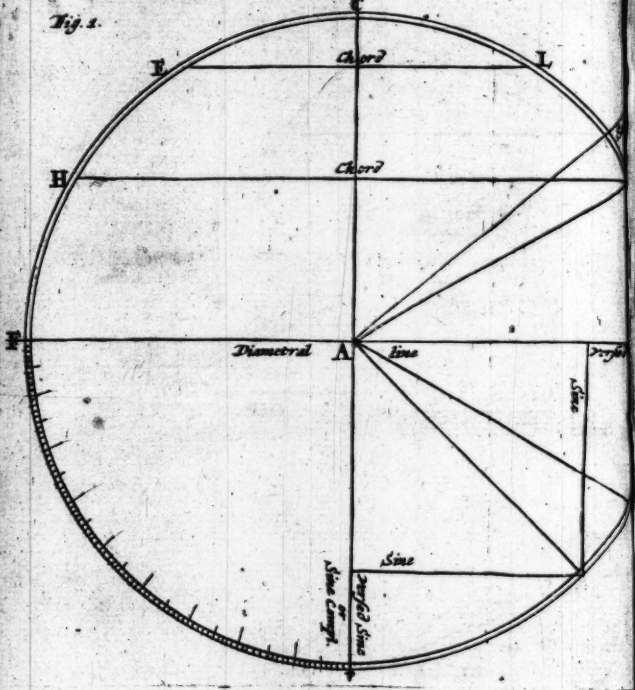


Fig. 1.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Of the Mathematicks *in General*, &c. *By way of* Introduction.

1. THE *Mathematicks* are Sciences, which being founded upon certain *Innate-Principles*, do teach Rightly and Easily to Explicate *Occult Properties*, and Intricate Reasons of *Quantity*.

Or, the *Mathematicks* are Sciences of Quantity, the Foundation of other Arts, preparing the Learner for other parts of *Philosophy*.

2. The *Mathematicks* receive their Denomination from the *Greek* word *Mathesis*, which signifies *Discipline* and *Doctrine*, and doth not only signifie to Learn and Understand, but also to call to Remembrance the Knowledge of those things which are imprinted in the Mind, that is, a Remembrance raised from *Appearances*; as *Pythagoras* interprets it; or [illegible]'d by Knowledge it self, therefore the *Mathematicks* is such a Doctrine, whose Knowledge brings

us to the Remembrance of those *Principles* which are imprinted in our Minds.

3. And they are Arts so called for their Excellency, and this General Name is retained, because these of all *Disciplines* are the most Certain and Accurate, and which do chiefly require the Light and Instruction of a *Teacher*: so that they alone seem worthy of the Name of *Art*, as is testified by *Ramus* in his *Scholarum Mathematicarum*, Lib. 4.

4. Quantity is that whereby any thing is said to be Great, or Many, and is Twofold; *viz.* Either continued as *Magnitude*, or *Discrete* as *Multitude*. *Magnitude* is *Continued Quantity*, whose parts are knit together by a *common Term*: *Multitude* or Number is the collection of *Units*, and a Unit is said to be the Beginning of *Number*. Nay, 'tis *Number* it self, as most *Mathematicians* affirm, *&c.* But as to these Matters, and many other things proper to the *Mathematicks*, the Reader may abundantly satisfie himself, if he seriously peruse Dr. *Dee*'s *Mathematical Preface* to *Euclid*'s *Elements*, and for such as have not that Book, take this Brief Account in General:

5. The Parts of the *Mathematicks* (at least those of most general use) are these which

which follow, *viz. Arithmetick* and *Geometry*, and these two Parts only are called *Pure Mathematicks*, from whence are deduced many other Branches called *Mixt Mathematicks*, As *Astronomy*, *Geography*, *Algebra*, *Trigonometry*, *Perspective*, which contains *Opticks*, *Catoptricks*, *Dioptricks*, *Musick*, viz. *Harmony* (or the Proportion of Sounds) *Chronology*, *Mechanicks*, *Staticks*, (or the Art of Ballancing) *Architecture*, *Fortification*, *Navigation*, *Surveying*, *Dyalling*, &c. To which may be added also the Art of *Astrology*, which is grounded on, and depends upon *Astronomy*; *Astronomy* the Mother, and *Astrology* is the Daughter, according to *Kepler*.

6. And now to Inform the young Student what each of these Branches do contain, (1) *Arithmetick* is the Art of Numbring, or it affords Rules and Directions, diligently to search out the Reason and Use of Numbers. 2. *Geometry* is an Art by which is found out or discovered the *Magnitude* of things precisely, that nothing may deceive us, by appearing Greater, or Less, or Nearer or Farther off, Higher or Lower than it is, which chiefly conduceth to the measuring Distances, and the Capacity of things, *&c.* But the word it self imports

no more than Measuring of the *Earth*; and 'tis said the *Egyptians* were the first Inventers of it.

9. The Terms of *Geometry* are a *Point*, a *Line*, a *Surface*, a *Term or Bound*, an *Angle*, a *Body*, a *Right-Line*, a *Perpendicular*, a *Parallel Line*, a *Tangent*, a *Secant*, a *Chord*, and a *Spiral Line*, &c. And of *Angles*, there is a Plain Angle, a *Rectilineal* or *Right Angle*, an *Obtuse*, an *Acute*, a *Curvilineal* and *Mixt Angle*; also the Angle of *Position*, and a *Solid Angle*.

8. In Triangles or Right Lin'd Figures there is the *Scalene*, the *Equilateral*, the *Oxigonal* or *Acute-Angled Triangle*, the *Ambligon*, the *Square Figure*, the *Rhomboides*, the *Trapezia* and several *Poligons*, of which *Euclid* is very copious in the Definitions to the several Books of his *Elements*; where you may also be Informed of the Nature of several Bodies, as the *Pyramide*, the *Prism*, the *Sphere*, *Cylinder*, *Cone*, and such like.

9. *Astronomy* is a Science which teaches how to know the *Stars* and their Motions. As also the Motion of the *Planets*: It also shews how to compute the exact time of the *Eclipses* of the Luminaries.

10. *Astrology* is an Art that teaches how

to Predict or Foretell future things by the Motions and Aſpects of the Planets.

11. *Dyalling* ſhews us Rules how to find the Hour of the Day by the Shadow of the *Sun* upon a *Plain* in any Poſition, *&c.*

12. *Opticks* is a Science of the *Sight*, and the *Eye*, which is the Member or Inſtrument of Seeing, and becauſe we ſee things ſometimes by *Right* or *Direct* Rays; ſometimes by *Reflected*, and at other times by *Refracted* Rays, this Science is therefore divided into three parts. The Firſt retains the general Name of *Opticks*, and treats of all that concerns a *Right* and *Direct* Ray. The Second is called *Catoptricks*, and treats of *Reflex* Rays; the Third is called *Dioptricks*, and handles the Subject of *Refracted* Rays; this Art ſhews the Reaſon why things appear to our Eyes ſometimes Bigger, ſometimes Leſs, ſometimes more Diſtinct, ſometimes more Confuſed, ſometimes farther Diſtant, ſometimes Nearer; This *Science* gives a Reaſon why ſome cannot ſee, but very near; and others ſee not, but at a diſtance; alſo why the Eye cannot ſee it ſelf, and how it comes to paſs that our two Eyes ſee not Two, but One ſingle Object; it alſo diſcovers the miſtakes of our Sight. This Subject is lately moſt ex-

cellently handled by Esq; *Molineux* in his *Dioptrica Novo*, Printed in *English*, and frequently to be had amongst the Booksellers of *London*: It is of great use in the making *Telescopes*, *Spectacles*, *Perspective Glasses*, &c.

13. *Catoptricks* treats of *Reflex* Rays, which shews the Rules and Causes of different *Reflexions*, according to the Diversities of Bodies, where they are made. It treats in particular of all sorts of *Looking Glasses*, of Plain, Convex, Concave, *Parabolick*, *Hyperbolick*, *Eliptick*, and of Burning Glasses, *&c.* Moreover, *Dioptricks* shews the Rules and Reasons of the making all sorts of *Microscopes* as well as *Perspective Glasses*; as also all such Instruments that serve to Magnifie or Lessen, *&c.*

14. The *Statick* Art treats of Weight and *Poysure*, as the *Ballance*, the *Beam*, the *Stilliard*, &c.

15. *Architecture* shews us the Art of *Fair Building*, &c. and is copiously handled of late years by many good Authors.

16. *Fortification* informs us how to make *Strong Forts* both *Offensive* and *Defensive*, and of late years it has been much Improved in many Places of *Europe*.

17. *Navigation* is well known in this Age, to be the Art which Directs the skil-

ful

ful *Mariner* how to conduct or carry his *Ship* from one Port to another in any Part of the World, of which we have variety of Authours in our English Tongue: And these are some of the most Excellent Uses of the *Mathematical Sciences*.

18. But if the Authors thereof be consulted, you may find almost *Infinite Variety*, and a multitude of Terms appertaining thereunto, some whereof are *Explained* in their *Authors*, and others left to the understanding of the Readers; and for such as are Ignorant in these Matters, this Book was chiefly Intended, and 'tis hoped is now sufficiently Copious, and may prove of Excellent Use for the Industrious Student in these Laudable Arts.

19. *Musick* is a Science appertaining to the *Mathematicks* also, and has its several parts very copious, but being more for Pleasure and Delight than of real Use, I shall leave it to the Masters thereof.

20. *Chronology* is an Art which gives us an Account of *Time*, even from the Beginning of the World; but some Authours that Treat thereof, give us a very uncertain Account of its Beginning: However, 'tis a curious Art, and ought to be Incouraged.

21. *Geography* is an Art which gives us a Description of the whole World, *viz.* of Sea and Land, in the several or particular Parts thereof: But *Cosmography* takes in or includes the whole World, both Celestial and Terrestrial: And thus you have a brief Account of the Excellent Use of the several Parts of the *Mathematicks*, which affords as much Delight and Satisfaction to the Industrious Student therein, as all the *Liberal Sciences* taken together, and the *Study* thereof is no less Profitable than Commendable, and thus much I thought convenient to intimate as a Taste to the young *Tyro*, by way of Introduction.

Mathem-

Mathematical Definitions.

I. Of Lines and Angles.

That Geometry *is, has been already defin'd in part, some tell us 'tis the Art of Measuring well: It considers three Principal things that belong to Body,* viz. *Superficies, Lines and Points, which really signifie the Surface or outside of a Body.*

1. A *Point* is no Quantity, but said to be the Bound of a Line.

2. A *Line* is the Bounds or Limits of a Surface or Superficies.

3. A *Surface* is the Bound or Limits of a Body, the first of these has neither Length, nor Breadth, the second has Length without Breadth, and the third, Length and Breadth without Depth.

4. A *Right Line*, is that which lies even between 2 bounded Points.

5.

5. *A Plain Surface*, is that which lies eve
between its two Bounding Lines, eithe
as to Length, or Breadth, or both.

6. *An Angle*, is made by the meeting of tw
Lines, and is either greater or leſs, a
thoſe two Lines either incline or ſtan
farther off, ſo that if ſeveral Lines hav
the ſame Inclination, their Angles ar
ſaid to be Equal.

7. *A Right Angle*, is when one Line ſo fal
upon another, that the Angles on eac
Side the Perpendicular are Equal.

8. *A Perpendicular*, is when one Line
falls upon another; that both the Angle
on each Side are Equal as aforeſaid, an
are therefore ſaid to be two Right Angles

9. An *Obtuſe* or Blunt Angle, is that whic
is Bigger than a Right.

10. An *Accute Angle*, is that which is Le
than a Right. See the Figures themſelve

11. A Right Lin'd Angle, is that which
made between 2 Right Lines.

12. A Curv'd Lin'd Angle, is made of tw
Crooked Lines, a mixt Angle is mad
by a crooked or arched Line and a ſtreigh
one. See the Figures at the beginnin
of the Book for theſe and the reſt, *&c.*

13. *Parallel* Lines, are thoſe that lean n
at all, but if they were extended woul
never meet.

2. *Of Figures and Triangles, &c.*

14. A *Plain Figure*, is a Plain Figure incloſed, incloſed within one or more Lines.

15. A *Triangle* is bounded, that is bounded with 3 Lines.

16 An *Equilateral* hath all his three Sides Equal.

17. An *Iſoceles*, or equal Legg'd, which has two Sides Equal.

18. A *Scalene* Triangle, has no Side Equal.

19. A *Right Angled* Triangle, has one Right Angle.

20. An *Acute Angled* Triangle, has all his Angles Acute.

21. An *Obtuſe Angled* Triangle, has only one Obtuſe or Blunt Angle.

22. A *Parallelogram*, is a four-ſided Figure, whoſe two Oppoſite Sides are Parallel Lines. See a Scheme of the Figures hereof at the Beginning.

3. *Of the Circle.*

23. A *Circle*, is a Figure drawn upon a Plane, bounded with one Line, commonly

ly called the Circumference, to which all Lines drawn from the Center are Equal.

24. The *Diameter* of a Circle is a Right Line passing through the Centre, bounded with the Circumference, and dividing the Circle into two Equal parts.

25. A *Semicircle*, is half the Circle, or Figure continued between the Diameter and the half of the Circumference.

26. A *Segment* of a Circle, is a Figure contain'd between a Right Line called a *Chord*, or any part of the Circumference usually called an Arch.

27 *Equal Circles*, are such whose Diameters or Semidiameters (usually called Radius's) are Equal.

28. *Circles* are said to touch, when they do only touch, but not Intersect or cut one another.

29. A *Right Line* is said to touch a *Circle*, when being continued, it does not cut the Circle, and this is a Tangent Line.

4. *Of Proportion.*

30. A *Multiplied* Magnitude, is that which contains another Magnitude, a certain Number of times precisely.

31. An

1. An *Aliquot*, or simple Part, is that which being Repeated a certain Number of times, is equal unto, or measures out another Magnitude precisely.

2. *Ratio* or Reason, is the Comparison of two Quantities one with another, whereby one is said to be Bigger or Less than another; in which Comparison, that which preceeds, is called the *Antecedent*, and the other, the *Consequent*.

3. Those Quantities only admit of Reason, which being multiply'd, may exceed each other.

4. The *Homologous* Terms in any Proportion, are the two *Antecedents*, or the two *Consequents*.

5. *Right Lin'd* Figures, are such as have Equal Angles, and the Sides about those Equal Angles proportional.

6. *Reciprocal* Figures, are, when you compare the Sides of one Figure to the Sides of the other, and the *Antecedents*, and the *Consequents* of the Reasons are in both Figures.

7. A *Rectangle*, is a *Parallelogram*, whose Angles are Right, and a *Square* is a *Rectangle*, that has all its Sides Equal; and these are generally called the Powers of Lines.

5. *Of*

5. *Of Solids*, viz. *Solid Bodies.*

38. A *Solid Angle*, is made by the meeting together of ſeveral Plain Angles in one Point or Corner, and of theſe there muſt be three at leaſt.

39. A *Solid*, or Body, is that which hath Length, Breadth, and Depth.

40. Like *Solid Figures*, are ſuch as are contained under an Equal Number of like Plain Figures.

41. A *Pyramid* is a Solid Figure, whoſe Sides are Plain Triangles, and their ſeveral Tops meeting altogether in a Point.

42. A *Priſm* is a Solid Figure, the two Ends (or oppoſite Sides) of which, are alike, Equal and Parallel, and all the other Sides are *Parallelograms*, as may be ſeen by the Figure thereof.

43. A *Sphere* is a Solid Figure, bounded with a Surface; to which Superficies all the ſtreight Lines that can be drawn from the Centre Point in the Figure, will be equal.

44. The *Axis* of a Sphere, is that Reſting Right Line, about which, if a Semicircle be Turned, it will beget a *Sphere*; and

th

the Centre of this *Sphere*, is the Middle of this *Axis*. And so the Diameter of a *Sphere*, is a Right Line passing through the Centre, and bounded at each End in the Surface, or Superficies of the Sphere.

5. A *Cone* is a Solid Figure, arising from a Circular Base of streight Lines ending in a Point called the *Vertex*, or Top thereof, and the *Axis* of this *Cone* is a Right Line drawn from the *Vertex* to the Centre of the Base; and this is called a *Right Cone* and so a *Right Cylinder*.

6. A *Cylinder* is a Solid Figure, rising from a *Circular Base* as the *Cone* does; but the Right Lines end also in an Equal Circle at Top.

7. *Cones* or *Cylinders* are such, whose Axis and the Diameters of their Bases are proportional.

8. A *Cube* (or Dye) is a Solid Figure, contain'd under Six Equal Squares.

9. A *Tetrahedron* is contain'd under Four Triangles Equal Sided.

10. An *Octahedron* is contain'd under Eight Triangles, in the same manner.

11. A *Dodecahedron*, is contain'd under Twelve Pentagons, all Equal.

12. An *Icosaedron*, is a Figure contain'd under

der 20 Triangles Equal and Equal Sided and those five last are called Regular Bodies. See their Figures.

53. A *Parallelepipedon*, is a Solid Figure contain'd under Six *Parallelograms*, whose Oppofites are all *Parallel*.

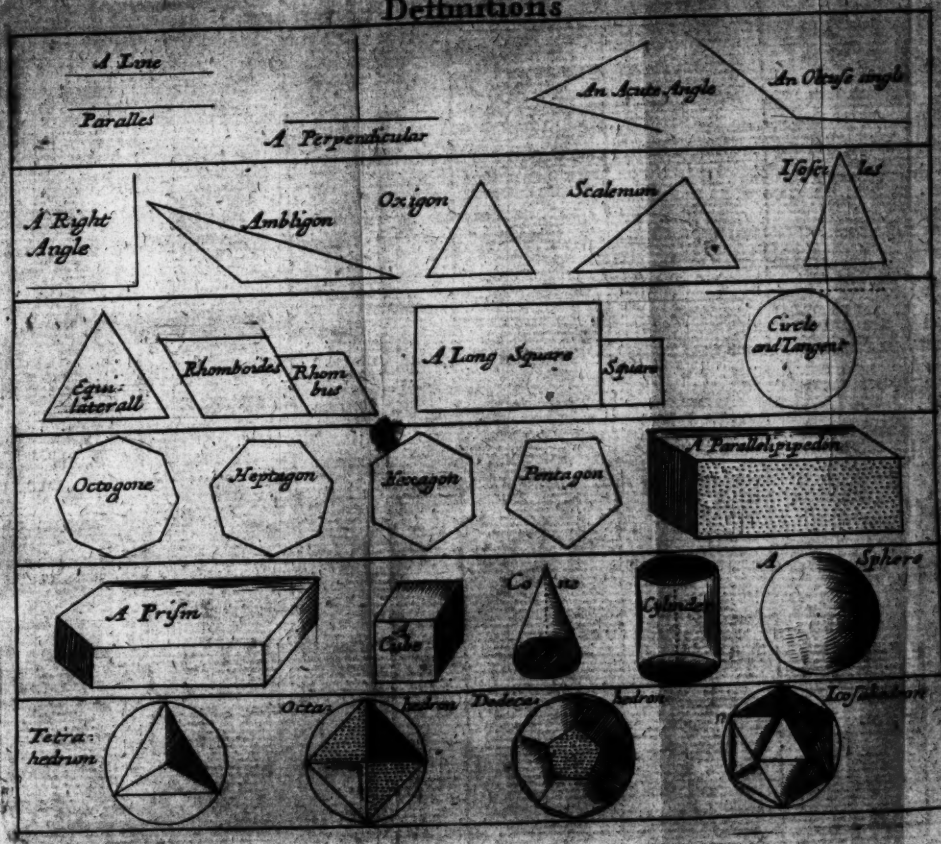
54. One *Figure* is said to be Inscribed in another, when all the Angles of the Figure Inscrib'd touch either the *Angles*, *Sides* or *Planes* of the other *Figure*.

55. A Figure is said to be Conscrib'd (or Circumscrib'd) when either the Angles, Sides or Planes of the outward Figure touch all the *Angles* of the *Figure* that is *Inscrib'd*.

Those that have a desire to see more Definitions of this Nature, relating to *Mathematical Discipline*, may consult *Euclid's Elements*: These being sufficient for the young Student; and most of them are Explain'd more at large under their Respective Heads Alphabetically: and with all, you may consult the Figures at the beginning hereof, the better to inform the Fancy.

A *Mathe-*

Definitions



Mathematical Dictionary, &c.

A

ABscission [or cutting off] of Light; from the Latin word *Abscindo*, to cut from, is a term in Astrology, and signifies a weakning of a Planet, which happens when three Planets are within the bounds of their Orbs, and the middlemost is a *weighty* Planet; to which another lighter, being in fewer degrees of the Sign, applies; and the third being in more degrees, separates from it: But before the first, moving Direct, comes to be corporally joyned with the said *ponderous* Planet, the third becoming in the mean time Retrograde, does thereby come up before it to the said middle Planet: Then is the third said to *cut off the light* of the first. It may likewise happen another way, that is, when the middle Planet applies to a conjunction with the last; but the first being *lighter*, (that is, more *swift* in motion) passes him, and comes *first* to a conjunction with the Planet which he is tending unto.

Abus, or *Apsis*; a Latin word, signifying properly, the bowing, or hollow arch of an Oven;

but amongst Astronomers 'tis used as well for the *highest part* of the Circle; to which, when a Planet comes, it is at the greatest *distance from the earth*; as the *lowest part* thereof, when he is the *nearest to the Earth* that he can be. The first is call'd, the *Apogæum*: The second, the *Perigæum* of a Planet. By the mutation of these *Absides*, or points, and their passing from one Sign to another, Astrologers pretend to discover the *Revolution* of States, *&c.*

Absolute Equation, is the aggregate or sum of the Excentrique and Optique Equations; and therefore it is called the Absolute or Compound Equation.

Accidents; Astrologers by this term mean the most remarkable chances that have happened to a man in the course of his life: As a grand sickness at such a year: An extraordinary fortune such a year: An eminent danger at such a time, *&c.* By these, where they have not the true, but only the estimate time when a person was born, they find out the true hour and minute of the Native's birth, as exactly as they could have found out at what age such accidents should have happened to him, had the true time of birth been given them.

Accidental { Dignities and Debilities } are certain casual affections of the Planets, whereby they are strengthened or weakned, by reason of being in such a house of the Figure, or the like. As a Planet in the mid-Heaven has five Accidental Dignities: In the 12th house as many Accidental Debilities. They are called Accidental, because they are suddenly altered, and in contra-distinction to

Essential

Essential Fortitudes and Debilities: As when a Planet is in his own House, or in his fall. The Table of the Planets essential dignities is common in Mr. *Leslie*'s Almanack. That of their Accidental Fortitudes and Debilities, you have in his Introduction, p. 115.

Acre, A measure for Land, containing (by the Statute) 160 square Rods or Perches. See the Appendix.

Acronycal, From a Greek word *Acronythos*; signifying, of, or belonging to the Evening, is one of the remarkable manners of the Rising or Setting of Stars, and different both from Cosmical, or Heliacal: For when a Star rises when the Sun Sets, 'tis said to rise Acronycally, and when it Sets when the Sun Sets, 'tis said to Set Acronically.

Acute Angle, Is an Angle less than a Right Angle, or less than 90 degrees, and therefore called Acute, that is, sharp: As in *Scheme* 1. the Angle O. A. B. containing but 40 degrees, is an Acute Angle.

Addition is one of the five vulgar Rules of Arithmetick; and is no more but a putting together, or collection of two or more numbers into one.

Æra, A Latin word, and sometimes from the Greek, called *Epotha*, is the beginning of an account of Time, founded on some extraordinary accident. As we Christians reckon from the Birth of our Saviour: The old Romans, from the Foundation of their City, *&c.* Hence the Birth of Christ, or the Building of *Rome*, is called the Æra of our or their account.

Æstival Solstice, from *Æstas*, Summer, *Sol*, the Sun, and *Sto*, to stand; is when the Sun en-

ters *Cancer*, (generally the 11th of *June*) For when the Sun is got furtheſt from the Equator, and is ready to return, 'tis called a Solſtice, that is to ſay, a ſtay of the Sun, becauſe he ſeems then for ſome time to ſtand ſtill. The other called the Hyemal, Brumal, or Winter Solſtice, is in *December*, when he enters *Capricorn*.

Aggregate, The whole gathered together; the Sum, or Total.

Airy Triplicity; Aſtrologers having divided the 12 Signs of the Zodiack into four *Threes*, according to the four Elements, call'd *Gemini*, *Libra*, and *Aquary*, the Airy Triplicity.

Alcochoden, or the Giver of Life; is a Planet that diſpoſes of, or has dignities in the Hylegiacal (or principal) places of the Figure when a perſon is born; and according to his condition, ſo may the Natives life be expected to be longer or ſhorter.

Aldebaran, The name of a Royal Fixed Star in the 4th degree of *Gemini*, within almoſt three degrees of South Latitude, of the nature of *Mars* and ſo violent, that Aſtrologers ſay, being with the Luminaries, or *Saturn* or *Mars*, eſpecially in the Aſcendant, he threatens an untimely or violent death.

Alfridarie, is a word often uſed by Arabian Aſtrologers, and ſignifies a temporary power which the Planets claim over the life of a Native in ſuch an order; which being both difficult and vain, I omit.

Algebra, is an Arabick word, and ſignifies an abſtruſe ſort of Arithmetick, the Art of Equation, or a certain Rule for the finding out the hidden powers of numbers, as well abſolute as reſpective.

respective. See the derivation in *Dee*'s Mathematical Preface to *Euclid*.

Alhidade, is a word seldom used by English Authors, but signifies only the Label or Index that moves upon the Centre-pin of an Astrolabe.

Aliquot parts, are the even or equal Numbers that may be had out of any great Number; As 6. 4. 3. 2. 1. are severally Aliquot parts of 12; because six may be had twice in 12. Four may be had thrice in 12. Three may be had four times in 12. Two may be had six times in 12, and One, twelve times.

Alligation, A Rule of Arithmetick; so named, because it teacheth to knit or bind together divers things of unequal prices, whereby to find how much of each must be taken, according to the question propounded.

Almagest, The Title of an excellent Book, written by *Ptolomy*, of the Sphere, *&c.*

Almanack, The word is originally Arabick, and signifies as much as distribution, or numeration, whence our Annual Books, wherein the days of the Month, Eclipses, Lunations, Festivals, *&c.* are set down, numbred, distributed, are so called.

Almicanthars, are Circles of Altitude parallel to the Horizon.

Almuten, An Arabian word, and term in Astrology, signifying the Lord of a Figure, or strongest Planet in a Nativity, *viz.* That Planet that hath most Essential and Accidental Dignities.

Altern Base, A term used in Trigonometry, distinguishing from the true Base: As thus; in oblique Triangles the true Base is always either

the Sum of the Sides, (and then the difference of the Sides is called *the Alterne Base*,) or the true Base is the difference of the Sides, and then the Sum of the Sides is called the Altern Base. As in the Oblique Triangle, A D E (in Scheme 6) A E is the Sum, and A F the difference of the Sides D E and D A; A F is the true Base, and A E the Alternate Base, according to *Norwood*.

Altitude, [Lat. Height,] the Sun, Moon, Stars, &c. being any number of *degrees* above the Horizon, are said to have so many degrees of Altitude. Altitude of a Figure. *Richb.* fol. 14. is the parallel distance between the Top of a Figure and the Base.

Amblygonium, From the Greek *Amblys*, blunt, or obtuse, and *Gonia*, an Angle; is a term in Geometry, and signifies a Triangle, that hath one of its Angles obtuse, that is, greater than a Right Angle. See Angle.

Amblygon, is of the same derivation and signification, but used for an obtuse Cone, viz. A Cone whose Axis is shorter than the Radius of its Base.

Amphiscii, (From the Greek *Amphi*, on either side, and *Scia*, a shadow, or, in English, people of *double shadows*) are the Inhabitants of those Regions under the Equator, or between the Tropicks of *Cancer* and *Capricorn*, because their shadows are cast sometimes towards the North, and sometimes towards the South, according to the Sun's different course; such are the people of the Golden *Chersonesus*, or *Malacha* in the *East-Indies*, the Isle of St. *Thomas*, the middle of the Isle of St. *Laurence*, &c.

Amplitude, Lat. signifies the space and number of

of degrees contained between the East or West point of the Horizon, and the Rising or Setting of the Sun, Moon, or any Star; or if the Sun, Moon, or Star be above the Horizon, then so many degrees are contained between the Azimuth of the Sun, Moon, or Star, and the said East or West point, shall be called their Amplitude.

Anabibazon, Gr. *Anabibazon*, to lift up or rise; The Dragon's head, or the Northern Node of the ☾, where she passes from South to North Latitude. (thus marked ☊) is sometimes so called, because 'tis above the other Node, called the Tail.

Anaclasticks, A branch of the Opticks, called also Catopticks, a Science, which by the Rays of some luminous object, reflected on a plain superficies, partly obscure, and partly diaphanous, considers, and finds out its form, affections, greatness, distance, and the like.

Anaclastics, Are also part of the Opticks, which by the lines of the Stars, and other visual objects, refracted in a medium of different thickness, measures their figures, magnitudes, distances, &c.

Analemma, Gr. [properly the Firmament, but used for] A plain Projection of the Sphere, called also the Orthographical Projection, where the Sphere is cut into two Hemispheres, and the Eye placed at an infinite distance vertically to one of the Hemispheres, then a right line extended from the Eye to any assigned point in the Sphere, called Surface of that Hemisphere, shall project the assigned point upon the plain, and the distance upon the plain from the Apex, or top of the Hemisphere, to the projected point, is equal to the line of the Arch from the vertex of

the Hemisphere to the assigned point, the Radius being the Semidiameter of the Sphere. See the Description and Use of the English Globe, *sect.* 6.

Analysis, Gr. [A resolution, unfolding, or untwisting of a Matter, Argument, or Problem;] Whence the Adjective **Analytical**, done, or doing, by way of opening, or resolving.

Analogie, Gr. [Proportion, or like comparison;] but in Mathematicks 'tis a double comparison, or proportion of Numbers or Magnitudes one to another: As when we say, as 4 is to 2, so is 8 to to 4. Hence **Analogical**, proportionate, or alike.

Anareta, Is a Greek word, and signifies; *A cutter off*; and therefore Astrologers use it for the killing Planet, or Planet threatning death in a Nativity, which is usually the Lord of the Eighth, or one posited near the Cusp of the 8th. *&c.*

Angle, In Geometry, the meeting of two Lines make an Angle. As in Scheme 3, A is an Angle, so is B and C, *&c.* Thus B is the Angle of the sides B A and B C; and C is the Angle of C A and C B. Thus the meeting of two *Walls* in a Building makes a *Corner*, (call'd in Latin *Angulus*, whence this term of Art is derived.) An Angle is either *Right*, *Acute*, or *obtuse*. A **Right Angle** is, when a Right Line falls perpendicularly upon another Right Line, so as it leaves an equal space on either side: for where it so touches the other Line, it makes two *Right Angles*. As in Scheme 3, the line B A makes two Right Angles at A, on the line D A G. It contains just 90 Degrees. An **Acute Angle** is less than a Right one, that is, it leaves less space between both sides, and is more *sharpned*. It contains less than 90 Degrees. But

an

an *Obtuse* [blunt or broad] Angle, is that which is greater than a *Right* one, and leſs *ſharp*, and contains more than 90 degrees. As in Figure 3. The meeting or joyning of the Lines B A and A G at A, makes two *Right Angles*. The Lines G A and B G makes an *Acute Angle* at C: and the Lines B C and B D meeting at B, makes an *Obtuſe Angle* at B.

In Aſtrology certain Houſes of a Celeſtial Scheme are called Angles, *viz.* The Horoſcope, or the firſt Houſe, the *Angle of the Eaſt*; the 10th Houſe, the *Angle of the South*; the 7th Houſe, *Angle of the Weſt*; and the 4th Houſe, the *Angle of the North*. See Fig. 2.

Angle of Incidence, is an Angle made by a line that falls a-ſlope upon another line; as in Fig. 1. The line O A falling ſo upon the line B A, makes at O A B an Angle of Incidence with the line B A.

Angle of Reflection, is an Angle made by a ſtraight line, which proceeds from the Angle of Incidence, as the line A D is an Angle of Reflection to the line A B. And note, that both theſe terms, Angle of Incidence, and Angle of Reflection, are chiefly uſed in Dialling, and ſometimes in Aſtronomy, for calculating Eclipſes of the Luminaries. Now in Dialling, the *Angle of Incidence* is made by the ſtraight line that proceeds from the Sun to the Dial-plane. And the *Angle of Reflection* is made by the ſtraight line that proceeds from the *Angle of Incidence*, making on the other ſide a perpendicular *Angle* equal to the Angle made by a perpendicular, and the line of Incidence, as is beſt demonſtrated in *Ceiling Dials*; for the Glaſs receiving the beam of the Sun,

Sun, reflects it upon the Ceiling with the same Angle it receives its beam from the Sun; so that the Angle of Reflection is equal to the Angle of Incidence.

Angle of the Sun's Position, is the Angle made by the Intersection of an Arch of a Meridian Line, with an Arch of an Azimuth, or any other great Circle cutting through the body of the Sun.

Angle of Ships Course. See *Sea-man's Exp.* fol. 44.

Angle of the East, &c. *viz.* The point of the Compass that the Ship Sails upon.

Angle of Parallax. See *Parallax.*

Animodar, commonly called the Animodar of *Ptolemy*, because he invented it; is one of the ways of *Rectifying Nativities*, or artificially to find out the exact minute ascending at Birth; which is thus: Consider the degree of the Sign wherein the last New Moon was before the Birth; or if it were a Full Moon, the degree of that Sign either of the Luminaries that was above the Earth, was in, and see which Planet hath most Essential Dignities in that degree. And if the degree it be in, is nearer to the Cusp of the Ascendant, than to the Cusp of the mid-Heaven, place so many degrees Ascending as the Planet that so ruled the degree wherein the last New or Full Moon was, is in the Sign; but if its degrees be nearer the mid-Heaven than the Ascendant, make the degrees of the mid-Heaven the same its are, and so vary your former Figure according to either of those Angles. But neither this way, nor that other called the *Trutine of Hermes*, is so much to be approved as the me-

thod

thod of Rectifying by *Accidents*; but are chiefly used in Childrens Nativities, calculated before Accidents have happened.

Anomaly, from Anomalia, Inequality, Irregularity or unlikeness in motion, &c.

Antarctick. See Artick.

Antecedent of the Reason, By Geometricians is termed the Quantity in all Proportion that refers it self to another: As that to which another refers it self, is termed the Consequent of the Reason. Thus, in the Reason of a line of six Feet, to a line of three Feet; the line of six is the Antecedent, and the line of three, the Consequent of the Reason.

Antilogarithme, The Complement of the Logarithme of any Sine, Tangent, or Secant to 90 degrees.

Antiperistasis, An Encounter of Contraries, as Heat kept in by Cold, waxes stronger in it self, or Cold kept in by Heat grows more vehement.

Antipodes, From the Gr. *Anti*, against; and *pous*, *podos*, a foot: People going with their feet right against ours; or the Inhabitants of one part of the Earth diametrically opposite to another. S. *Austin de Civitat Dei*, *L.* 16. *C.* 9. derides the notion, and others of the Fathers denied that there could be any such thing: but now, not only in reason from the Spherical form of the Earth, but also from experience, we are satisfied of the truth of the opinion.

Antiscions, From the Gr. *Anti*, against; and *skia*, a shadow, are places of the Zodiack of the same vertue: As the Antiscion Signs are those which, with reference to each other, are equally distant from the first degree of the two Tropical Signs

Signs ♋ and ♑. As for example, The Sun in the 10th degree of *Taurus*, is as far distant from the first degree of ♋, as when he is in the 20th degree of ♌. And therefore he is said to cast his *Antiction* to the 20th of ♌; that is, he giveth vertue or influence to any Star or Planet that at that time either is in the same degree, or casteth any Aspect into it.

Antœci, Gr. From *Anti*, against; and *oicos*, an house or dwelling: [*People dwelling just contrary.*] Those are called so by Geographers, that dwell in equal or opposite Parallels, having the same Latitude and Elevation of the Pole, but not of the same Pole, but the other on the contrary side of the Equator; so that as much as the North-Pole is Elevated to one, so much is the South to the other: As the *Antœci* of *London* are those that dwell in 51½ South, having like Ascensions, but in opposite Signs, like length of days, and temperature of Climate, but not in the same, but quite contrary months.

Apertio Portarum, Lat. [An opening of the Gates.] 'Tis used by Astrologers to signify some great and evident change of Air, upon certain meetings or configurations of the Planets, whence such Positions or Aspects are called *Apertiones Portarum*; and those so accounted, are the Conjunctions, Squares, or Oppositions of Planets whose houses are opposite; As *Saturn* and the *Sun*; (& the house of the latter being opposite to ♒ the house of the former.) *Saturn* and the *Moon*, *Jupiter* and *Mercury*, *Mars* and *Venus*, (for the like reason.) And so much greater will the mutation be, if the Moon separate from one, and applying to the other, convey and reinforce their vertue.

Ap-

Apotrometrie, From the Greek *Apo*, from *mécos*, a distance, and *metria*, a measuring; is an Art teaching the Practiser how to measure things at a distance, *viz.* how far they are off from him.

Apparent, The apparent or visible place of any Star or Planet, is that place of Heaven which it seems to be in by the straight line that proceeds to it from the eye. See **Parallax**.

Aperture, From the Lat. *Aperio*, to open. The Glass at the further end of a Tube; it hath sometimes part of its circumference covered with a Pastboard, having a round hole in it, that the Object, if it be small, may be the better beheld in the centre of the Glass; and then so much of the Glass as is seen through that hole, is called the Aperture, as well as the whole circumference.

Apex, [L. The top, or highest Point.] There are the pictures of Stars placed on the Reets of the Mathematical Jewel, and upon some *Astrolabes*, and one of the points of the Stars is always longer than the rest. This point is called the *Apex*, and is indeed the place of the Star; the whole figure of the Star being made only to guide you thereunto.

Aphelion, A Greek word, from *Apo*, from, and *Helios*, the Sun; is that point in which the Earth, or any Star, is furthest distant from the Sun; as **Perihelion** is when 'tis neareſt the Sun.

Apheta, Gr. otherwise called *Hylech*, [The Giver of Life.] In the Figure of ones Nativity, *Ptolemy* reckons up only four Significators that can be so accounted, *viz.* The Light of the Time; (that is, the Sun by day, the Moon, if born in the night.) The Planet that has most dig-

dignities in the places of the Luminaries, the part of Fortune, and the Ascendent.

Aphorism, Gr. A general rule, or short notable observation experienc'd for a truth in Art.

Aplanes, [Setled, or free from wandring. A Greek word, from *Alpha*, which in composition is of privative signification, and *planesi*, wandring.] Fixed Stars, in contradistinction to Planets, are so called, but most times the Sphere it self wherein they are placed.

Apogeon, A Term in Astronomy signifying a point in the Heavens where any Planet is farthest from the Centre of the Earth.

Application, is a term in Astrology, used when two Planets within the quantity of their Orbs are drawing near together either by Conjunction, or Aspects: Note, that the Superior Planets are not said to apply to the Inferiors, (unless they be Retrograde,) but ever the lighter to the more ponderous. As if ☽ be in 10 degr. of *Taurus*, and ♂ in the 7th deg. of the same Sign, here ♂ applies to a □ with ☽. If *Mars* had been in 7 d. of ♋, he had applied to a ✶ of ♄, and so of the rest. An Application may happen three ways; as when both Planets being Direct, the swifter overtakes the slower; or when both are Retrograde, and the lighter does not come Direct, till he comes up to the body or Aspect of the heavier; or when one is Direct in fewer, the other Retrograde in more degrees of a Sign. The first brings on business fairly and kindly, the other two either suddenly perfect it, or after many hopes and crosses utterly destroy it.

Apotome. [A thing abruptly cut off; from the Greek *Apotemno*, to cut off.] A term in Geometry

metry: As if from a Rational Line AGD be cut off a Rational Line AC commensurable in power only to the whole; the remainder BC is irrational, and may be called an Apotome, or a Residual. See *Euclid. Elem.* 10. Prop. 74. for the demonstration, and *Elem.* 10. Third definition.

Apogeon, From the Gr. *Apo*, from, and *ge*, or *gaia*, the *Earth*. The highest part of the Planets Eccentrick, or Epicycle, or the point where they are furtheſt off the Earth, and more elevated, and ſtrong. As the Sun is in his Apogæon about the 6th degree of *Cancer*, being then 4588960 miles from the earth; whereas in Perigæon, when he is in *Capricorn*, he is not above 4272480; ſo that the whole quantity of his Elongation, or the ſpace between one and t'other is in a direct line 316480 miles. And note, the Apogæa, and Perigæa of the Planets are not fixt always in the ſame place, but varied in Time; being obſerved, according to the order of the Signs, to be moved with a daily (but exceeding) ſlow and almoſt inſenſible Progreſſion. All which cauſes Irregularity in the Planets motions, being ſlower in their Apogæons, and ſwifter in their Perigæons, See Alfag.

Apophæa, The Moon is called ſo by Greek Authors, when ſhe ſeparates from one Planet, and applies to no other. See Void of Courſe.

Aquarius, A Water-bearer, from the Lat. *Aqua*, water. The Eleventh Sign of the Zodiack, thus character'd ♒; 'tis one of the Houſes of *Saturn*, of the Aiery Triplicity, *&c.*

Arch, (By ſome written Arke, and derived from the Lat. *Arcus*, a Bow.) Is a part of a Circle intercepted from one point to another, by which

Geo-

Geometrically, and by way of Proportion; W gather the quantity of the whole Circle, o some other thing sought after, as in Fig. 1. H is an Arch, so is L I, and L F, or any part of Circle less than a whole Circle.

Arch of Direction, A quantity of the Equato intercepted between two points in Heaven, whereof one is the place of the Significator, th other of the Promissor; and which one of them in a certain space of time, must run over, unti he is devolved to the other.

Architecture, is a Mathematical Science, which teaches the Art of Building, or a skill obtain by precepts of Geometry, &c. teaching the righ way of designing all sorts of Structures; and is threefold, Edification, or the Art of Building Houses: *Gnomonica*, or Dialling; and *Machina tia*, the mystery of Machines, or Engines. Sc *Vitr. L. 1. C. 3.*

Arctos, Gr. [The Bear.] A Constellation i the North part of Heaven, whence the North Pole being near thereunto, is called the Pole Arctick; and the Circle described 23½ degr from the same Pole, The Arctick Circle, as th opposite or South Pole of the World, and Circl thereunto, are termed the Antarctick Pole and Circle. But note, There are two Arctick and Antarctick Circles, *viz.* Those of the Poles o the World, and those of the Poles of the Eclip tick.

Area, Lat. [An open space, or yard, but] i Geometry, the plain superficies comprehended between the sides of any Figure, plain or circular.

Argument, The Arch by which we seek ano- ther

ther Arch, (or part of a Circle) is called by Mathematicians the Argument, in resemblance of Argumentation in Logick; for as a Logical Argument leads us to the knowledge of something before unknown, so this Arch notifies to us another Arch unknown, proportional.

Argument of the Moons Latitude, is her distance from the Dragons-Head, or Tail, *viz.* where the Orbit of the Moon in two points diametrically opposite, is intersected by the Ecliptick, whereby we find out the quantity of the real obscuration in Eclipses, or how many digits are darkened.

Argument of Inclination, is an Arch of the Orbit intercepted between the Node ascending, and the place of a Planet from the Sun, being numbred according to the Succession of the Signs. See *Harmon. Cœlest.* Book 2. Cap. 14.

Aries, Lat. [The Ram.] One of the Celestial Signs, and first in order in the Zodiack, of the fiery Triplicity; the House of *Mars*, and Exaltation of the Sun, who coming to enter the first degree thereof, makes the days begin to exceed the nights, which is called the Vernal Equinox, or Revolution of the World.

Arithmetick, From the Greek word *Arithmos*, numbers, The Art of Numbring, one of the principal Disciplines of the Mathematicks, and which necessarily precedes the rest, being conversant about *Diserete Quantity*, that is, Numbers, and thereby distinguish'd from Geometry, which considers *Continual Quantity*; yet are they not so opposed, but that they joyn hands, and help each other; Geometry carrying the same proportion to Arithmetick, as a point to an unite, a Line to

a Simple Number, and a Body to a Number compounded; and in most of their operations they mutually borrow terms and assistances from one another.

Armillary Sphere, From the Latin, *Armilla*, a Bracelet, or round Ornament for the Arm. A hollow Sphere made up only of the Circles, and not representing the solid body of the Celestial Globe, or places of the fixed Stars.

Aurora, (Gr.) The Morning or Break of day, *quasi aurea hora*, the hour when it begins to shine or be light; 'tis a Term used by Poets, as well as Astronomers, *&c.*

Artificial { day { From Sun-rising to Sun-setting. / night { From Sun-set to Sun-rising.

Artificial { Numbers, / Secants, / Sines, / Tangents. } See *Logarithmetic Numbers, Secants, Sines, Tangents.*

Ascendent, From *Ascendo*, to arise. That part of Heaven which ascends, or is coming up above the Horizon in the East; called also, the *Horoscope*, the Angle of the East, and the *First House* in a Celestial Figure, which signifies the beginnings of things, the life corporate, and manners of a Native, *&c.* But by some Authors, all that quarter of Heaven, spreading from the fourth House, by the way of the East to the mid-Heaven, is called the Ascendant, because the Planets therein, and parts of the *Primum Mobile*, are always rising

rising; and on the opposite part, from the Meridian to the 4th House by the West, they are always descending. See Fig. 2.

Ascensions and Descensions of Signs, are parts of the Equator, which do co-ascend, [rise] or set with such a Sign or part of the Zodiack, or any Planet happning to be therein. And these Ascensions and Descensions are either Right or Oblique: Right Ascensions are parts of the Equator, which ascend by a Right Line, comprehending all those parts of Heaven which are contained under a Right Line drawn by the Poles of the World, and the opposite parts of the Equator; and always happen in a Right or Direct Sphere. But in an Oblique Sphere, only in the Right Circle or Meridian. Oblique Ascensions and Descensions are parts of the Equator, which rise or set obliquely in an Oblique Sphere, that is, where one of the Poles is elevated, and the other depressed; and the more oblique the Sphere is, the more oblique will the Ascension of the Equator be, and consequently less of it ascend with Northern Signs, and more with Southern: and, on the contrary, the greater Arch will descend with Northern Signs than with Southern. And *this Arch of the difference intercepted between the Right and Oblique Ascension*, is called the *Ascensional difference*. See Sphere.

The Ascensional difference, [*which is only the number of degrees remaining after subtraction of the Oblique from the Right Ascension*] For having the Elevation of the Pole of your place, and the Declination of the Star, presently the Ascensional difference appears, which according as the Declination is Northern or Southern, is to be

added or substracted from the Right Ascension of the same Star; which being done, gives the Oblique Ascension or Descension at the said Elevation of the Pole, by which means Directions are perfected.

Aspect, From the Lat. *Aspicio*, to behold: is a correspondence or familiarity of two Planets mutually beholding each other with some Ray harmonically consider'd; or when they are posited at such a certain distance in the Zodiack wherein they mutually help or afflict one another; or have their vertues encreased or depraved: For by good Aspect they assist, but in evil they are said to hurt each other. Of these Aspects properly there are but 4. viz. *Sextile*, *Quartile*, *Trine*, and *Opposition*, to which is added a *Conjunction*, though improperly called an Aspect. *Kepler* defines an Aspect thus; that it is *an angle formed on the earth, by the luminous Rays of two Planets, efficacious to the stirring up of Nature; for when two Planets are joyned with, or beheld of each other, they seminate something in sublunary Bodies according to their own nature.* See Appendix.

Astragal, A Term in Architecture, belonging to the *Ionick* Order. See *Vignola* pag. 44.

Asterism, [From *Astrum*, a Star.] A Constellation; or parcel of fixed Stars put together: so as to represent the figure of some particular thing, and thence are called by a common name; as the *Bear*, the *Harp*, the *Lion*, *&c.* are Constellations.

Astrolabe, A Mathematical Instrument to observe the Sun or Stars with; otherwise called a Planisphere, because it represents in *Plano*, almost the whole Celestial Doctrine, as the Motions, Distances,

stances, Ascensions, Descensions, Declinations, &c. of the Stars.

Astrology, From the Greek *Aster*, A Star; and *Logos*, the speech or reason; and therefore signifies in English, *the speech and language of the Stars*. It is a Science that teaches a conjectoral knowledge, obtained from the observation and position of the Stars; of the success of things depending on Celestial Influences; to predict the grand mutations of nature, and natural fortune of man, woman or child.

Astronomy, [The Law of the Stars; Gr. From *Aster* a Star; and *Nomos*, a Law, or Rule.] A Science that teacheth us the affections and motions of the Planets and Celestial Bodies for any time past, present, or to come.

Asymptote, A Term in solid Geometry, of a Line in a Geometrical Figure, wherein is certain Curve or Irregular Lines, arising from the Section of solid Bodies.

Athazet, is when the Moon is in the same degree and minute with the Sun, or when she is 12 degrees, or 45. 90. 150. 168. 180. 192. 215. 270. or 348. degrees from him.

Atmosphere, [The Sphere of Vapours: Gr. From *Atmos*, a vapour; and *Sphæra*, a sphere.] That part of the Air which is neareſt to the Earth, as far as the Terrestrial vapours ascend; for the Earth and all the Planets are enclosed in their several Atmospheres; so much of the Circumambient Air as is within the Sphere of their respective Activity, being called the *Atmosphere* of the Earth, or of such a Planet.

Aug. or **Auge**. See *Absis* or *Apogæon*, for 'tis the same, an old Term in Astronomy now seldom used.

Austral, [Southern] Signs, The six last Signs of the Zodiack, *viz.* ♎, ♏, ♐, ♑, ♒, and ♓, are so called, because they are on the South-side of the Equinoctial.

Automata, [Gr. Self-movers.] Mathematical Instruments or Engines, that going by a Screw, Spring, or Weight, &c. seem to move of themselves; as a Clock, a Jack, &c.

Autumn, Harvest, or Fall of the Leaf, one of the four Quarters of the Year, beginning when the Sun enters ♎. Called so from the Latin Verb *Augeo*, which signifies, to Encrease, because then the Fruits of the Earth are encreased to full maturity, and the Husbandman's Gains augmented thereby.

Aut, or *Augt.* See *Apogeon*, which signifies the same.

Axiom, Gr. A common Sentence, Principle, or Ground of any Art, generally taken for granted. Or, 'tis a Proposition or short Sentence; a Maxim generally allowed to be true and undeniable, as in saying, The whole is greater than its part.

The word *Axis* is also used in *Geometry*, as the *Axis* of a Cone, of a Cylinder, of an Ellipsis, or an *Hyperbola*, i. e. an Imaginary Line that passes through the Centre, from one end to the other.

Axis, Lat. An Imaginary Line which passing from one Pole of the World through the Centre of the Earth, is terminated in the other Pole, about which we conceive the whole Machine or Frame of the World to be turned.

Azimene, Gr. [Lame, or Weak,] Certain degrees in the Zodiack are called so by Astrologers, because Persons born when any of them Ascend, are generally lame, blind, or have some other incurable imperfection.

Azimuth,

Azimuth, is an Arabick word, signifying the Arch of a great Circle of Heaven, imagined to pass from the Zenith to the Nadir, cutting the Horizon at Right Angles.

The Azores are Islands in the North Latitude of 40 degrees, said by some to be scituated at the true Western Meridian, whence they would Compute the Longitude of all places from thence, rather than the Fortunate Islands.

B

Backstaff, An Instrument used by Sea-men for observing the Height of the Sun with ones back towards it, whereby the great inconvenience of the Sun's beams glaring in the Eye is avoided.

Balance, Two Stars called the North and South Balance, also one of the Celestial Signs, and 'tis a Term in Mechanicks.

Barren Signs, *Gemini*, *Leo*, and *Virgo*, are counted so by Astrologers: As, as if a Question be propounded whether one shall have Children, or not? If one of these Signs Ascend, or be upon the Cusp of the 5th House, they take it for an Argument, that the Querent shall have none.

Barometre, or the Weather-Glass now used with Quick-silver in a Tube of Glass that Rises against fair Dry Weather, and Falls against Wet, foul, and stormy, *&c.*

Base, or Bass, The Ground-work, or Foun-

dation of a matter, the Pedestal of a Statue; in Geometry and Perspective, either the Ground-Line, or the Flat upon which other Lines or Figures are Erected; as the Base of a Cone or Cylinder, &c.

Bastion, The Fort or Bulwark of any Fortification. See all the Terms thereof in a late Book published by Mr. *Rob. Mordant.*

Battalion, a French word in Military Discipline, signifying a certain Number, or the main Battel, a Squadron of Men drawn up into a Body, either Horse or Foot, or both.

Bay, is a Term in Geography, Architecture, Fortification.

Bearing, The point of the Compass that one place Bears or stands off from another, 'tis often used in *Navigation*. As in the Books of *Seller, Sturmy, Norwood, Phillips*, &c.

Besieged, is when any Planet is placed betwixt the Bodies of the two Malevolent Planets *Saturn* and *Mars*; as ♄ in 15. ♈. *Mars* in 10. of ♈, and ♀ in 13. ♈. Here Astrologers call *Venus Besieged*, and it represents (says Mr. *Lilly*) in Questions, a man's going out of God's Blessing into the warm Sun, if *Venus* be his Significatrix.

Bestial Signs are, *Aries, Taurus, Leo, Sagittary*, and *Capricorn*, because they bear the names, and are represented on the Celestial Globe in the Figure of Four-footed Creatures.

Bicorporal, *Double-bodied*: A word sometimes used by Geometricians, but oftner by Astrologers, *Gemini, Sagittarius*, and *Pisces* are *Bicorporeal Signs*.

Bimedial, If two medial Lines (as in Fig. 4.) A B and C D commensurable in power only, containing

taining a Rational Rectangle, are compounded, the whole A C ſhall be irrational, and is called a firſt *Bimedial Line* For the Demonſtration, ſee *Euclid, Elem.* 10. *Prop.* 38.

Binomial, A Term in *Algebra*, ſignifying a Root of two numbers or parts. See *Kerſeys* Algebra.

Biquintile, Is a new Aſpect obſerved by *Kepler*; ſo called, becauſe it conſiſts of two fifth parts of the whole Circle, *viz.* 144. Degrees, and counted a benevolent Aſpect, as the *Quintile*, *Sextile*, and *Trine* are, though of a ſmaller force.

Biſſextile, *Leap-Year*; (ſo called, becauſe then they ſaid twice the ſixth Calends of *March*) when once in four years a whole day is added, to make up the odd ſix hours, which the courſe of the Sun yearly exceeds 365 days, being inſerted, or put in next after the 24th of *February*.

Biſect, [From the Lat. *Bi*, twice, and *Seco*, to cut,] To cut in two. A Line or Arch that cuts another Line, Arch, or Circle into two equal parts, is ſaid to *Biſect* that Line, Arch, or Circle: As in Fig. 4. the Line B A F is *Biſected* by the Line C A I in A, and the Line C A I is *Biſected* by the Line F A B in A; ſo is the Circle B C F I *Biſected* by the two Lines B A F in B and F, and in C I, the Lines C A I and F A B; (being prolonged.)

Biſegment, One of the equal parts ſo *Biſected*:

A Body, is Geometrically defined to be a Magnitude which has length, breadth, and depth, and is either *Regular*, *Irregular*, or *Mixt*: The *Regular Bodies* are five. *viz.* A *Cube*, a *Tetrahedron*, a *Dodecahedron*, an *Octohedron*, and an *Iſocahedron*. Some Geometricians would take in a *Sphere* for a ſixth Regular *Body*, but others reject it. An Irregular

gular *Body* hath not its sides equal to one another. A *Mixt Body* is made by an equal cutting off the Angles of a Regular *Body*.

Bootes, A Constellation of Starrs so called in the Heavens, and Delineated or Expressed upon the Celestial Globe.

Boreal, Lat. [*North*] *Signs*, ♈, ♉, ♊, ♋, ♌, ♍, because placed in the Northern Semicircle of the *Zodiack*.

Box and Needle, An Instrument used in Surveying of Land: and finding out the situation of any Side, by the pointing of one end of its Needle towards the North.

Brachialum, Lat. [*A little Arm*] A member of an Instrument sometimes used upon *Astrolabes*, and other projections of the Sphere. 'Tis commonly made of Brass, having several joynts, that the End or Point may be set to any Degree on the Astrolabe. It is by English Writers sometimes called a *Creeping Index*.

Broken Radiation, A Term in the *Dioptrick* Art, wherein is considered the breaking of Beams as they are seen through a Glass or Chrystal, cut into several plains or faces.

Bulwark, A Fort or Fortress to defend a Town.

Bipartition, to divide into 2 parts.

C

Cacodæmon, [The Greek, *Kacos*, and *Daimon*, the *Evil Genius*.] Astrologers call the 12th House so, because of its direful significations, as secret Enemies, Imprisonments. &c.

Cadent,

Cadens, Falling, or Weak, and *Abscet*; from the Lat. *Cado*, to fall. They are Houses next from the Angles of an Astrological Figure, as the Third, the Sixth, the Ninth, and the Twelfth. Also a Planet is said to be *Cadent*, or in his Fall, when he is in a Sign opposite to that of its Exaltation.

Calends, The Ancient *Romans* divided their Months into *Calends*, *Nones*, and *Ides*; which way is still used by many writing in Latin. To understand it, observe 1st, That the *Calends* were the first day of the Month; the next were the *Nones*, being 6, in *March*, *May*, *July*, and *October*; and fell on the 7th day of these Months, but in all other Months were but 4, and happed on the 5th day. The *Ides* were last, eight in every Month, being on the 15th of the four before-mentioned Months, but on the 13th of all the rest.

2ly. Note, that they reckon'd all these backwards, as *Calendis Maii*, is the first of *May*; but *Pridie Calend. Maii*, the day before the *Calends* of *May*, is the 30th of *April*; III *Calend. May*, *April* 29, and so downwards to XVII *Cal. Mai.*, which is 14 *April*. Then began the *Ides*, as *Idibus Aprilis* the 13th of *April*; *Pridie Id. Apr.* the 12th *April*, III *M.* the 11th of *April*, and so on to VIII. *M. Apr.* which is *April* the 6th. Then were the *Nones*, as *Nonis Aprilis*, *April* the 5th. *Pridie Nonarum*, *April* the 4th. III *Non. Apr.* the third of *April*, IV. *Non. Apr.* the second, and their *Cal. Apr.* the first of *April*. Thus to go on with *May*, the second of *May* is VI to *Nonarum*, (because we told you that was one of the Months that had 6 of them.) The 3d day is V. *Non.* The 7th day *Nonis Maii*: The 9th day, VIII of the *Ides* of *May*; The 15th the *Ides* of *May*; but the 16th shall be the 17th of the

Calends

Calends of *June*: The 17th of *May* XVI. *Calend. Junii*, and so on. All which the Ancients, for the help of memory, expressed in these five Verses.

Prima dies Mensis cujusque est dicta Calendæ.
Sex Nonas Maius, Octobris, Julius & Mars;
Quatuor at Reliqui; Dabit Idus quilibet octo.
Inde dies reliquos omnes dic esse Calendas,
Quos retro numerans dices a Mense sequente.

Which I thus English,

The *Roman Month* its several *days* divides
By reckoning backwards, *Calends*, *Nones*, and *Ides*.
Eight *Ides* hath each, and but four *Nones* they say,
Yet six have *March*, *October*, *July*, *May*:
After these *Nones*, and *Ides*, the rest of all
The days you must the next Month's *Calends* call.

I have been the larger upon this, because most Authors that have gone about to explain it, have left it in as perplexed an obscurity as they found it, especially to one unacquainted with the *Roman* Usages. From these *Calends* comes our common word Calendar.

Callippick Period, is an Agreement of the great *Lunar* year with the Nineteen-year *Circle of the Sun*, found out by one *Callippus*, and therefore so called. It contains 76 years; in which time the Lunations, or Changes of the Moon, return to the same day of the Month, and hour as before.

Cancer, [Lat. the *Crab*.] A Sign of the *Zodiack*, thus character'd, ♋; 'tis the House of ☾, and the Exaltation of *Jupiter*; and is so called, as well because there are in it 3 Stars on each Side, which represent a *Crab's* Claws, as because the Sun, when he

he comes into this Sign haſtens to the Equator, going backwards from us like a *Crab*.

Canicular days, or Dog-days, when the Sun Riſes with a Star called the Syreus or Dog Starr about *July* 19. ends *Auguſt* 27.

Canon, [Gr. A Rule.] The Tables of *Artificial Sines*, *Tangents*, and *Secants*, are ſo called. Or a General Rule to Reſolve any Problem, is called a *Canon*.

Campaign, From the French, a Wide and Level piece of Ground, fit for an Army to Encamp, a Term much uſed in War and Military Affairs.

Capital, ſignifies in *Architecture* the Ornament that is made on the top of a Column, from *Capitalis* in Latin, of or belonging to the Head.

Carpentum, [Lat. A Chariot,] or Throne of a Planet, is when he is Poſited in a place where he has moſt Dignities, as *Aquary* of *Saturn*, becauſe he hath there both *Houſe* and *Triplicity*; *Sagittary* of *Jupiter* for the ſame reaſon, *&c.*

Capricorn, [Lat. the Goat,] one of the Signs of the *Zodiack*, the 10th in order thus character'd ♑. Earthly, dry, and cold; the Houſe of *Saturn*, and Exaltation of *Mars*.

Chart, or Card, [From the Lat. *Charta*, a Paper.] A Draught of Sea-coaſts, Sands, Rocks, *&c.* 'Tis alſo ſometimes taken for the round Paſtboard whereon the 32 Points are deſcribed in the *Nautical* Compaſs.

Cardines, Lat. ſignifies properly the *Hinges of a Door*, but is uſed for the chief or moſt material parts on which the reſt do in ſome ſort depend; As

Cardinal

Cardinal { Points, The *Angles*, or 1st, 4th, 7th and 10th Houses. / Signs, The Signs ♈, ♋, ♎, and ♑

Cast a Point of Traverse, is a term in Navigation, which signifies to prick down on a *Chart* the Point of the Compass any Land bears from you, or to find by Art what Point your Ship bears at any instant, or what way the Ship has made.

Cassiopea, A Constellation in the North part of the Heavens, wherein a New Star formerly appeared for many Months together.

Castor and Pollux, in Astronomy is a Constellation of Stars so called, and expressed upon the Globe.

Catabibazon, From *Catabibazo*, A Greek word signifying to descend, or go down against. The *Dragons-Tail*; sometimes so called, because it goes exactly against the *Dragons-Head*.

Cathetus, A Greek word for a *Perpendicular*. See *Perpendicular*.

Catoptrick, A branch of the *Opticks*, or an Art that teaches to Project a Confused Figure, seemingly without a design; yet when it is reflected on a proper Polish'd Body, it shall shew the design. From the Greek words *Cata*, against; and *Opto*, to see; because it chiefly treats of Reflexions.

Cazimi, An *Arabick* word, signifying the Centre of the Sun; so a Planet is said to be in *Cazimi*, when it is not above 17 minutes distant from the Centre of the Sun, as *Saturn* in 3 degr. 21 minutes of *Taurus* and *Sol* in 3 degr. 31 minutes of ♉. Here *Saturn* is in *Cazimi*, which is reckoned a great Fortitude to any Planet; but how it should

be so, when Combustion is so grand a Debility, let Astrologers consider.

Centenis, or Hundred parts of any Integer, whence Decimal Arithmetick is derived.

Centiloquium, A Book containing one Hundred *Astrological Aphorisms* commonly ascribed to *Ptolemy*, as its Author, but by some to *Hermes Trismegistus*. so called from the Lat. *Centum*, an hundred, and *Loquor*, to speak: as much as to say, the hundred notable Speeches.

Centre, A Point in the middle of a Sphere, or Circle, from which all lines drawn to the Superficies or Circumference are equal. 'Tis also used in *Perspective* for the *Visual Point*. The word is Greek, *Centron*.

Chiliades, *Characteristick*.

Chiliades, are the common Tables of Logarithms, Characteristique is the first Figure in each Number towards the left hand, and is always a Unite less than the Number of Place. the Logarithm represents, as if ---2, be the Index or Characteristique, then 'tis the Logarithm of 3 Figures.

Chord, is a straight Line subtended under an Arch, dividing a Circle into unequal parts, by which it differs from a *Diameter*: for that passing by the Centre divides a Circle into two equal parts. Thus the Lines E L, H O, in Fig. 1. are called *Chords*.

Chorography, From the Greek *Choros*, a place or tract of Ground; *Grapho*, to write, describe, or treat of: Called also *Topography*, is a part of *Geography*, which delivers the description of particular Provinces or Kingdoms only.

Chronogram, From the Greek *Chronos*, Time; and

and *Crator*, a Ruler; being as much as to say in English, *Lord of the time*. Some take it for the Sun in the day, and the Moon by night. Others divide the Life of Man into seven parts, and ascribe the Government of each to a particular Planet; as from the Birth to four years old to the Moon, from thence to 14 years old, to *Mercury*, thence to 22 to *Venus*, &c. And these they call *Chronocrators*.

Circle, Is a plain Figure, contained in one Line only; in the midst whereof there is a Point, from whence all Lines drawn to the Circumference are equal. As in Fig. 1. the Circle is marked C L O I D I F H E, and is described upon the Centre A; from whence all straight Lines drawn to the Circumference are equal.

Circles of Altitude. See *Almicanthars*.

Circle of Inclination, is a great Circle about the Sun; in the Sphere of the Fixed Stars, falling right upon the *Ecliptick*.

Circles of Position, Are Circles passing by the common Intersections of the *Horizon* and *Meridian*, and through any Degree in Heaven, or the Centre of any Star, or other Point in Heaven, used for the finding out how such a Star is situated, in respect of the World. The twelve *Astrological Houses* are likewise distinguish'd by Semi-circles of Position.

Circumference, From the Lat. *Circum*, about, and *Fero*, to bear, or encompass; in Greek Periphery: They both signifie no more, but the outermost Circular Line, which embraces the whole *Area* (or Contents) of any Figure. Sometimes the words are used for the whole Superficies of the Earth, or for the *Convex* and outward part of any Celestial Sphere.

Circumferentor,

Circumferentor, Has the same Etimology with the last word; but is also the name of an instrument used for Surveying of Land: So called, Circumferre, because it is fit and easie to be *carried about* with one. See *Rathborne's Survey*, B. 2. Chap. 2.

Civil Days, contain just 24 hours a piece, reckon'd from 1 a Clock at Noon, or Night (according to the custom of the place) on one day, to the same time the next day. In which space of time, the Equinoctial makes one Diurnal Revolution on the Poles of the World. See *Turner's Astronomy, Book 1. Probl. 31.*

Civil Year, (so called in contra-distinction to the Natural,) is the Legal Year, used in conversation between man and man, for Bargains, Contracts, &c. which with us begins not till the 25th of *March*; it always contains only 365 civil days, except in the *Leap-year*, and then it has 366 days.

Climate, From the Greek word *Clima*, of the same signification, is a portion of the Earth or Heaven contained between two Parallels. And for distinction of Places, and different temperature of the Air, according to their situation; the whole Globe of Earth is divided into 24 Northern, and 24 Southern Climates, according to the half hourly encreasing of the longest days; for under the Equator we call the first Climate: from thence as far as the Latitude extends, under which the longest day is half an hour more than under the Equator, viz. 12 hours and an half, is the second Climate: where it is encreased a whole hour, the third Climate: and so each Northerly and Southerly Climate respectively hath its longest day half an hour longer than the former Climate, till in the last Climate North and South, the Sun

Sets not for half a year together, but moves Circularly above the Horizon.

Climatterical Years; So called from the Greek word *Climax*, a Gradation, or Rounds of a Ladder, because they are the great Steps, or remarkable Degrees whereby Man's Life ascends, or mounts up to its appointed Period, are certain observable years which are usually attended with some grand mutation of Life or Fortune. As the 7th year, the 21th, made up of three times seven, the 49th, made up of seven times seven, the 63d, being 9 times seven, and the eighty first which is nine times nine, which two last are often called the Grand *Climatterick*, in which many famous men have been observed to die. Not only the Learned Heathen, as *Plato*, *Cicero*, *Augustus*, &c. have written much of these *Climacterical* years; but several Fathers, and Doctors of the Church, as *St. Ambrose*, *Austin*, *Beda*, &c. have justified the Observation to be neither Superstitious, nor unprofitable.

Collection of Light, An Astrological phrase when two principal Significators do not behold each other, but both cast their several Aspects to a third Planet more weighty than themselves whom they both receive in some of their Essential Dignities; then is such Planet said to Collect, or gather together their Lights, which signifies in Art thus, that a person somewhat interessed in both Parties, and described and signified by this Planet, shall by his Interposure effect and accomplish the business, which otherwise could not be perfected.

Column, An upright round Pillar, made according to the Rules of Architecture; the *Body* of it

is called in Lat. *Scapus*, in English the *Shaft*, or *Shank*; the Ornament on the Top, *Epistylium*, or *Capitulum*, in English, the Capital, or *Chapiter*; that which it stands on, *Basis*, or *Pedestal*.

Colures, so called either from the Greek Verb *Colão*, which signifies to joyn, or glew together, because the other moveable Circles of the Sphere are (as it were) Conglutinated or united by these; or from the Greek words *Colobon*, a piece or part divided from the whole, and *Oura*, a Tail, because in the Conversion of the World, these Circles in most places of the Earth, are never seen whole, but only some parts of them, like mutilated Tails. Whatever be the Original of the Name, they are two great Circles imagined in the Heavens, passing by the Poles of the World, and mutually cutting each other at Right Angles, the one passing from Pole to Pole through the beginning of *Aries* and *Libra*, is thence called *the Equinoctial Colure*. The other through the beginning of ♋ and ♑, which occasions it to be term'd the *Solstitial Colure*. Their use is, to divide the *Equator*, *Zodiack*, and all the Heaven into 4 equal parts, and shew the 4 principal Points of the *Zodiack*, to which, when the Sun comes, he distinguishes each quarter of the year.

Combust, [Burnt, or scorched; a Participle of the Latin Verb *Comburo*, to burn.] When a Planet is not above 8 degr. and 30 minutes distant from the Sun either before or after him; he is said to be Combust, or in Combustion, as ☿ in 10 degr. of ♈, the Sun in 18 of ♈; here ☿ is Combust, which is always a great Debility, and in Judgement shews, that the party by such a Planet signified, is in great fear, and much over-powred by

some great person. And note, Combustion is much the worse, when the Sun hastens to ☌ with the Planet, than when he receeds from him; in regard its the Body of the ☉ that doth afflict.

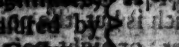
Combust way, By reason of several violent and malefique Fixed Stars in the second half of *Libra*, and throughout the whole Sign *Scorpio*. All that space is called *Via Combusta*, the *Combust way*, being about 45 degrees in Longitude, which is counted unfortunate, and to weaken any Planet that happens to be therein, especially the Moon, who is there so much Debilitated, that it is reckoned next to an Eclipse.

Cometes, Gr. A Comet, or Blazing-Star: so called from another Greek word *Kaiw*, Hair; because most Comets seem to have hairs about them. There are several opinions, or rather offers concerning the Matter they consist of; but the most vulgar opinion is, that they are Earthy vapours having gross parts strongly compacted, which being drawn up sometimes even above the Orb of the Moon, are there set on fire, and continue flaming for some time; and then, the matter being consumed, disappear. They are generally thought to be as Beacons fired, to foreshew the approach of Divine vengeance, in Sword, Plague, Famine, or some other lamentable Calamity.

Commanding Signs, These first six, ♈, ♉, ♊, ♋, ♌, and ♍, are accounted and called so by Astrologers.

Commensurable in Power, [From the Lat. *Cum* or *cum & mensura*, that is to say, equal measures.] Right Lines are said to be commensurable in Power, when their Squares are measured by one and the same space, or Superficies. See *Euclid*, *Elem.* 10. *Definit.* 3.

Commensurable Magnitudes, are such as are measured by one and the same Common measure; as A and B by C; for C repeated 6 times measures A, and repeated three times measures B: Therefore A and B are said to be Commensurable. See *Euc. Elem.* 10. *Def.* 1, 2, 3, &c.



Common Signs, are ♈, ♋, ♎, and ♑, so called, because they are characterized in a double form, and for that, being respectively at the end of each Quarter of a year, they partake of more or less of both Quarters; as the Sun in *Aries* not only ends the Winter, but begins the Spring. Under these Signs are born, as Astrologers say, Twins, Hermaphrodites, Monsters, &c.

Compass, An Instrument Sea-men use to steer the Ship by, much more easie to be understood by a Sight, than the best description.

Complement, (Lat. From *Compleo*, properly a filling up, or making good:) And therefore in Arithmetick it signifies that number that makes a lesser Number equal to a greater Number. As 45 is the Complement of 45 to 90; so in Geometry 'tis used in the Mensuration of Figures and Bodies: as if a Figure or Body contain 7 foot, and 4 foot be measured out of it, here 3 is the Complement. But by the Complement of an Arch, is usually understood so much as the Arch wants of 90 degrees to make it a Quadrant, or so much as it wants of 180 degrees to make it a Semicircle, or so many degrees as it wants of 360 degrees, to make it a whole Circle.

Complement of the Course. See *Seaman's Exp.* pag. 44. which is but the points the Course wants of 90 degrees, or eight points, *viz.* a Quarter of the Compass, &c.

Composite Order, A Way or Order in Architecture Compounded out of the other 4 Orders *Tuscan, Dorick, Ionick* and *Corinthian*. 'Tis used therefore to distinguish the size and shape of Columns. See *Vignola's* Compleat Architect, *pag.* 64. And when Authors say, *The Composite Capital*, or *Composite Base*, they only mean the Capital or Base that belongs to a Column of the *Composite Order*. So called, because it partakes, and is composed of the rest, as aforesaid.

Compound Equation. See Absolute Equation.

Compound Number, is that which some Number may measure, besides Unity; as 15, which is measured by 5 and 3.

Composition of Reason, is when the Antecedent with the Consequent are taken together, and one to be compared to the same Consequent, called *Composition of Reason*; because of the Antecedent and Consequent, there is compounded another new Antecedent. See *Euclid.* 5th *Elemen. Def.* 14.

Coefficient, A Term in *Algebra*. See *Kersey's Works*.

Concave, Lat. Hollow, or Bowing: As the face of Heaven appears to us; or the inside of a Tube, or the like. The contrary side of which bulging out, is called *Convex*.

Concentrick, Having the same Centre; as all Circles that are drawn from one Centre, though never so great or little; whence Astronomers call those Celestial Orbs, *Concentrick*, whose Centre is the

the same with the Centre of the World, as they term those *Excentrick*, of a different Centre; which, though they encompass the Earth, yet they have another Centre, and not that of the World.

Cone, [From the Greek Κωνος, properly a Pine-Apple;] and from thence it is used by Geometricians to signifie a like Figure, *viz.* A Body with a round flat Base, upon which every side of it is placed, so as it ends at the top, in a Point hanging directly over the Centre of the Base.

Conoide, A Solid Body like a Blunt or Obtuse *Cone*, in which form some Brewers Vessels are made.

Constellation, A company of Stars called by one name. See *Asterism*; From the Lat. *Cum*, *with*, and *Stella*, a Star; as much as to say, many Stars one with another. As *Aries* is a *Constellation*; the Great Bear is a *Constellation*; the Little Bear is a *Constellation*, *Bootes*, *Auriga*, *Canis Major*, &c. are *Constellations*.

Content, Contained in a Body or Figure.

Contingent Line, is a streight Line whereon is set the distances of the hour-Lines in the making Sun-Dials; from the Lat. *Contingo*, to happen upon, or touch: it is indeed a *Tangent* Line.

Continuation, Vide the Appendix hereunto.

Contra Antiscion, Gr. The degree and minute in the Ecliptick, opposite to the *Antiscion*. Which see, page the 11th hereof.

Convex, Lat. The out-side of a Ball, Globe, or any round Body. See *Concave*, that being the internal, this the external side or prospect of the same thing.

Converse Direction, is a deduction of a Significator to the place of the Promittors, made by the

motion of the *Primum Mobile*, contrary to the succession of the Signs.

Copernican System, is that *Hypothesis* that makes the Sun the *Centre* of the Universe.

Corinthian Order, One of the 5 *Orders* in Architecture, whereby to distinguish the size and shapes of Columns, and the Bases, Capitals, &c. thereunto properly belonging. See *Vignola's* Architect, pag. 52. because invented, or chiefly used at the City of *Corinth*.

Corollary, An Addition beyond what was proposed. The Consequences and Illustrations following Geometrical Problems, are called so by Mathematical Authors.

Cortin, A Term in Fortification.

Co-Secant, Co-Sine, and Co-Tangent, } The Complement of *Sines*, *Secants*, or *Tangents*, to 90 degr. or so many degr. as they want thereof respectively. See *Secants*, *Sines*, and *Tangents*.

Coslick, The old word for *Algebra*, or *Cossic*.

Cosmical, Stars are said to Rise *Cosmically*, when they Rise with the Sun; and to Set *Cosmically*, when they Set when the Sun Rises.

Cosmography, An Artificial description of the whole World, Earth and Heavens, and the several parts thereof; but 'tis sometimes used only for Geography, or a description only of the Globe of the Earth.

Coufe, A Sea-term signifying the Point of the Compass which the Ship Sails upon. As if you Sail Eastward, 'tis an Easterly Course, &c.

Crepusculum, or Twi-light, or Day-break.

Crisis, and Critical days. } These terms are chiefly used by Physitians; but since they cannot be found out but by Astronomy, we shall here briefly explain them. *Crisis* is used for a sudden change of a Disease into better or worse, Life or Death; and because by experience it hath been found that such changes happen for the most part regularly at such and such times; Hence they call those days *Critical days*, which are commonly believed to be every 7th day, by reason of I know not what kind of vertue in that number; but the truth is, the reason of those Conflicts between Nature and the Disease, is the Moons coming to the Quadratures, Oppositon; or Radical place; where she was at the beginning of the sickness; and one of these generally happens about the 7th day; but as the Moon is swifter, or slower in motion, it often comes sooner or later. Therefore the discreet Physitian ought to consult *Ephimerides*, without which they cannot give any true or rational Account of their observing these Critical days: For the better doing it, they should Erect a Scheme with 16 Houses; the form whereof you have in Mr. *Culpeper's Semiotica Uranica*.

Cronical. See Accronical.

Cross-staff, An Instrument Sea-men use to observe the Height of the Sun or Stars with.

Cube, A Solid Body containing equal and square Sides; as a Dye.

Cubed Cube, The sixth Power in Numbers.

Cube Number, The third Power in Numbers.

Cube Root, The Root or Side of the third Power: So if 27 be the *Cube*, 3 is the Side or Root.

Cubed Square, The Biquadrat, or 4th Power.

Thus

Thus 2 is the Side, 4 the Square; 8 the Cube of 2, 16 the Biquadrate, 32 the 5th Power, and 64 the 6th Power, or *Cubed Cube*.

Culmen Cœli, The highest Point in Heaven that any Star or Planet can rise to in any Latitude. 'Tis taken by Astrologers for the 10th House; and when a Star comes to the Meridian of any place, 'tis said to Culminate, or be Culminant.

Cuneus, Lat. A Body in form of a *Wedge*, and sometimes a Ruler or Label fitted to a Projection of the Sphere *in Plano*.

Curben, or Curvilineary, Crooked, or a Body Hollowed whence Figures consisting of Triangles, Quadrangles, &c. when they are considered as, or referred to Circles in the Heaven, are called *Curvilineary*, because they all consist of Arches of Circles distorted or bent and not real Arches, or to be made by the common Compasses; but found by Points, or an Instrument made on purpose to draw *Elipsick* Figures *Parabola's*, *Hyperbola's*, &c.

Cusp, The beginning or first Point of each of the 12 Astrological Houses so called.

Cycle [the very same with Circle] of the Moon, Is the Revolution of 19 years, which being expired, all the Lunations return to their former place in the Calendar.

Cycle of the Sun, Is a Revolution of 28 years, for finding out the Dominical Letters, which then return all in the same order as before.

Cycloide, is a Figure used in Solid Geometry and Algebra, described and demonstrated in most Authors of that Subject, as in Dr. *Wallis* his Works, &c.

Cylinder,

Cylinder, [Gr. properly a Rowler, such as is used in Gardens] whence in Geometry 'tis used for any Solid Body of that shape, *viz.* whose Base and Top are Flat, the Circumference of its Bases Round and Equal, and its Shank Long and Straight.

Cypher or *Cyfer*, a Character used in Arithmetick, in form somewhat like the Letter o, which alone or before (that is, towards the left hand of) any Numerical Figure, signifies nothing; but after another Figure, (that is, towards the right hand) increases that Figure ten times; if two Cyphers be placed after a Figure, they increase it an hundred times; if three, a thousand times: as 10, 100, 1000, *&c.* But in those Numbers called *Decimals*, they decrease towards the left hand in the like proportion.

D

Data, [Lat. Things given or granted] A Term in Geometry for something proposed or known, in order to the finding out of other things unknown. As two Sides and an Angle given in a Triangle, to find the third Side; Here two Sides and an Angle are the *Data*. See *Euclid's Data*.

Davis's Quadrant, An Instrument used by Seamen, wherewith they observe the Heighth of the Sun, with their backs toward it, to avoid its glaring in their eyes. See *Back-staff*.

Daily Motion, The Progress which any Planet makes in 24 Hours, by his own proper Motion.

Debi-

Debilities, [Lat. *Weaknesses*.] Certain Affections of the Planets, whereby they are weakened, and their Influences become less vigorous, or more depraved; and they are either Essential, as when a Planet is in his detriment, Fall, or Peregrine; or Accidental, as when he is in the 12*th*. 8*th*. or 6*th*. Houses, or Combust, or beheld of the Infortunes, *&c*. By each of which Circumstances, as he is comparatively more or less afflicted, so he is said to have in such a case so many or so few Debilities.

Decanate, [From *Decem*, *Ten*] by some called *Decurie*, and in Astrology, The Fact, is one Third part [or Ten Degrees] of each Sign, attributed to some particular Planet; who being therein, shall be said to have one Dignity, and consequently cannot be Peregrine, though if he be not otherwise fortified, we may repute him like a man ready to be turn'd out of doors, having much ado to keep up his sinking Credit. How these *Facts* are assign'd, you may see in the Table of Essential Dignities, commonly printed in the *Tutor to Astrology*, Coley's *Clavis*, or *Lilly*'s Introduction to *Astrology*.

Decimal Arithmetick, [From *Decem*, *Ten*] or *The Art of Tens*, wherein any Integer, as Pounds, Yards, Perches, *&c*. are taught to be divided into Ten, a Hundred, or a Thousand parts, *&c*. See *Kersey*'s Arithmetick.

Declination, [Lat. a bending, stooping, or going downwards] is a Term in Astronomy, used for the Bending or Digression of any Star, or part of Heaven, from the Equator towards either of the Poles of the World; and to which of them it happens to be, thence 'tis called North Declination, or South Declination. The beginning of *Aries* and

and *Libra* have no Declination at all, because they fall upon the Equator: but the Fixed Stars and Planets may Decline as far as the Parallels in which they are, even to 90 degrees. By the Declination of a Star, we know the Quantity of its Diurnal and Nocturnal Arch, its Elevation above the Horizon, Distance from the Zenith, Circle of Position, and the like. Of great use in Astronomy.

Declination of a Wall or Plain for Dyals, all Authors thereof most fully explain and demonstrate.

Decumbiture, [Lat. properly a Lying down.] In Astrology 'tis understood for a Figure erected at that moment, when a Disease first invades a Person, or when he is first so sensibly afflicted, as to take notice of it, and keep his Bed or Chamber, or refrain his Business. By which Figure of the *Decumbiture*, the Artist finds out the nature of the Disease, Parts afflicted, Prognosticks of Death, or Recovery, the most proper Medicaments, true Times of the *Crisis*, &c.

Definition, An Explanation, which in few words fully expresses what the thing is that is spoken of. See *Euclid's* Definitions in his several 15 Books.

Deferens, [From the Lat. *de* and *fero*, to carry.] or, The *Deferent*, signifies in Astronomy a Circle or Orb, carrying not so much the Epicycle, as the very Body of the Planet fix'd therein, and causing the same to be roll'd about the World, whether in its Epicycle, or proper Orbite. See *Riccioli*, *l.* 8. *c.* 20.

Degree, The 30*th.* part of a Sign, or rather the 360*th.* part of the whole Circle. As in Schemie 1.

the

the several small spaces between the two inner-most Circles, are Degrees. Each of these Degrees are divided into 60 parts, called *Minutes*, each Minute into 60 parts more, called *Seconds*, and so to *Thirds*, *Fourths*, *Fifths*, &c. The distance of one Degree of Heaven is vulgarly accounted to give 60 Miles on Earth; but by Mr. *Norwood's* Experiment it is 69. Of these Degrees, Astrologers have noted some to be smoaky, some to be dark, some deep-pitted &c. of which you have a Table at large in the *Tutor to Astrology*, and in all Books Introductory to the Art of Astrology.

Denominate, Of a Fraction, is shewed in all Books of Arithmetick, as in this $\frac{1}{2}$ which is one half, the 2 is the Denominator, and the 1 the Numerator. See Authors, &c.

Depress the Pole. So many Degrees as you Sail or Travel from the Pole, you are said to Depress the Pole, because it becomes lower and nearer to the Horizon: And so many Degrees you approach towards it, so much you are said to Raise the Pole, because then it becomes higher, and nearer the *Zenith*.

Descension, A Setting, or going down. See Ascension.

Detriment, [Lat. properly Loss or Damage] Astrologers call by that name one, and the greatest of the Essential Debilities of a Planet, *viz.* the Sign that is Diametrically [or Directly] opposite to that which is his House; as the Detriment of the Sun is ♎, because opposite to ♌; of the Moon ♑, because opposite to ♋.

Dexter Aspect, [Lat. a beholding towards the Right hand] is an Aspect contrary to the Order of the Signs; as ♄ in ♈, casting his ✶, □, or △ to

to any Planet in ♎, ♒, or ♐. This is called a *Dexter Aspect*, or beholding towards the Right hand, or forwards: Whereas if being so in ♈, he behold a Planet in ♊, ♌ or ♎, according to the natural Succession of the Signs, 'twould be a Sinister [or Left-hand] Aspect. And note, that the Dexter Aspect is, by the Ancients, accounted more forcible than the Sinister; but this is contradicted by others. See the *Tutor to Astrology*, p. 55. and other Authors mentioned before.

Diagonal, [From the Gr. *Dia*, and *Gonia*, of or belonging to a Corner] In Geometry a Streight Line drawn from one Angle of a Square to the opposite Angle.

Diagram, A Figure made with Lines or Circles, for the Demonstration of any Geometrical Proposition, such as you have throughout *Euclid*'s Elements. But in Musick it signifies a Proportion of Measures, distinguished by certain Notes.

Diameter, [From *Dia*, of or belonging; and *Materia*, the Measure of a thing] A Line which goeth through the middle part of any Figure; or more properly, as 'tis defined by our great Master *Euclid*, A certain Line drawn through the Centre, and terminated at each end in the Circumference of the Circle, thereby dividing the Circle into two equal parts. As in Fig. 1. the Line FB is the Diameter.

Diametrically opposite, Overthwart, right across, or exactly Contrary, as one end of a Diameter is to the other.

Dichotomies, Divided into two parts. Vide *Astron. Carolina*, fol. 12.

Dichotomy, Vide *Ram.* fol. 21.

Difference of Ascension. See Ascensional Difference.

Digit,

Digit, [Lat. properly a Finger, or a Fingers-breadth,] but used by Astronomers for the Twelfth part of the Body of the Sun or Moon, which they divided into so many parts, that they might know to a twelfth part how much of them was obscured in Eclipses. Some Writers make a Digit the *24th part* of the Sun or Moons Diameter.

Dignities, Are certain Advantages which a Planet hath by vertue of being in such a place of the *Zodiack*, or such a Configuration with other Planets, *&c.* whereby his Vertue is encreased or augmented.

Dimetient, Lat. The Measurer: But see Diameter being the same thing.

Diopter, Gr. A Rule or Line placed in the middle of an *Astrolabe*, or any the like Instrument, called by some *Linea Fiducia*; by others, *Alidada*. Which see before.

Diapason, Diapentr, Diatessaron, *&c.* are Terms in Musick, which shew the proportion of Sounds as Fifths, Eighths, *&c.*

Direct, A Planet is then said to be *Direct*, when by its proper motion it goes forward in the *Zodiack* according to the succession of the Signs, as from 10. degr. of 8 to 20. and thence into ♊.

Direction, is a real motion performed by the motion of the *Primum Mobile*, whereby the Sun, Moon, or any other Star, or part of Heaven, that at a mans Birth was his Significator, or is said to effect any thing concerning him, are carried to another Star, or part of Heaven, signifying likewise something referring thereunto; and as it were expecting the same to compleat an effect, then by accomplishing what in the Radix was signified according to the time of their Devolution each to

ther. The manner of Directions and Directing, is shewed copiously in *Coley's Clavis Astrologiæ Elimata*.

Discus, [Lat. properly a dish or platter, whence it comes to signify] any Figure Round and plain. And because the Bodies of the Luminaries, although really Spherical, by reason of their distance seem plain; therefore they are called *Discus Solaris, vel Lunaris*, the *Disck* of the Sun or Moon.

Disposer, [Lat. The Disposer.] In Astrology is that Planet which is Lord of the Sign in which another Planet happens to be; whom he is therefore said to dispose of.

Distance, A term oft used in Navigation, and signifies the Number of Degrees, Leagues, &c. that a Ship has sailed from any proposed Point, or the distances in Degrees, Leagues, &c. of any two places.

Diurnal, [From *Diei*, a Day,] daily, or of or belonging to day. But Planets or Signs are called *Diurnal*, which contain more Active than Passive Qualities; as on the contrary, they that abound in *Passive Qualities*, are said to be *Nocturnal*. For Example, since *Saturn* is more cold than dry, *Jupiter* more hot and moist, the *Sun* more hot than dry, they are term'd *Diurnal Planets*. But *Mars* being more dry than hot, and the *Moon* more moist than cold, are stiled *Nocturnal*. The like observe of Signs.

Diurnal Motion, is so many degrees and minutes as a Planet moves by his proper Motion in 24 hours.

Diurnal Arch, The Arch of Degrees that the Sun, Moon, or Stars runs between their Rising and Setting.

Dodecaedron, Gr. From *Dodeca*, twelve; and *Edron*, a Side. A Figure in Geometry of Twelve Sides, or as *Euclid* defines it; A Solid Figure contained under Twelve equal *Pentagons*, of equal Sides and Angles. As *Tetraedron* is a Figure consisting of 4 Triangles; *Octoedron* of eight Triangles; *Icosaedron*, a Figure contained under twenty equal and equilateral Triangles: So the *Dodecaedron* consists of twelve *Pentagons*.

Dodecatemorion, Gr. properly the twelfth part of any thing, but generally used for a Sign, or 12th part of Heaven: As when we say, the *Dodecatemorion* of *Aries*, or *Taurus*, *&c.*

Dominical [or Lords-day] **Letter**, From the Lat. *Dominicus*, one of the first 7 Letters of the Alphabet, wherewith the Sundays are mark'd throughout the year in Almanacks: To find which it is for every year, there are several Common Tables and Rules.

Doric Order, [From the *Dorii*: A people of *Achaia* in *Greece*, where this sort of Building was first Invented.] One of the 5 Orders in Architecture: The perfect description whereof, see in *Vignola's* Compleat Architect. *pag.* 5.

Doubtful Cases. See *Collins's* Sector on a Quadrant, *Fol.* 85, 86, 87, *&c.*

Dragons Head and **Taile**, Two Points where the Orbit of the Moon Cuts the Orbit of the Sun, and the Ecliptick: the one of them tends Northwards, the Moon beginning there to have North Latitude, and the other Southward, where she *Commences* South Latitude. This her Deviation from the Ecliptick seems to make a Figure like that of a Dragon, whose Belly is where she has the greatest Latitude,

and

and the Intersections represent the Head and Tail; from which resemblance 'tis so called. But note, these Points abide not always in one place, but have a motion of their own in the *Zodiack*, but Retrograde almost 3 minutes a day.

Dumb Signes or Degrees, or Runs, consult the Astrological Authors before mentioned.

Duplicate, [or Double] Proportion; double the size or proportion of one Figure or Body to another Figure or Body.

Duplicate Reason. See *Euclid. Elements*, 5 *Defin.* 10.

Dysis, The 7th House, sometimes so called. The word in Greek signifying the West.

E

Earthy Triplicity, Signs whose Nature and Influence participate of Earthy qualities, *viz.* Coldness and Dryness; which are *Taurus*, *Virgo*, and *Capricorn*.

Eccentrick, A Greek word, from *Ec*, the Preposition, and signifying, out of; and *Centrum*, a Centre.] Not having the same Centre with the World, or with an assigned Circle, of which kind several Orbs were invented by Ancient Astronomers, to solve the Appearances of the Celestial Bodies. Thus the *Eccentrick* Orb of any Planet, is that the *Concave* and *Convex* of whose Deferent have each of them a different Centre from that of the Universe: But because these *Eccentrick* Orbs

are carried with a rapid motion about the Earth; they thought it necessary there should be two other Orbs to include and carry about the former, which in one part, *viz.* their *Concave* or *Concave* should be *Eccentrick*, and in the other *Concentrick* (that is, having the same Centre with the World.) So that each Planet was supposed to have three several Orbs, *&c.* But this confused Celestial Clock-work, the *Copernican System* has pretty well removed.

Eclipse, [a wanting or failing, from the Greek word *Ecleipsis*] A deprivation of the Light of one of the Luminaries, when by their Conjunction in the Orbit of the Sun, his Face, by the Interposition of the Moons Body, is hidden from our sight: Or when their Opposition in the same Orbit, the Moon, by the shadow of the intervening Earth, is obscured. But between an Eclipse of the Sun and of the Moon, there are several differences: 1. In the Lunar Eclipse, she really loses her Light and is obscured, by wanting the Illumination of the Sun; but in the Solar, he loses not his Light, but only we are deprived of it. So that to speak properly, we should call it an Eclipse of the Earth rather than of the Sun. 2. As the Moons Eclipse is Real, so 'tis Universal, and appears always in the same Quantity on every Superficies of the Earth, where 'tis visible; but the Suns Eclipse is not Universal, but varied greater, lesser, or not at all, according to the diversity of the several Climates. Lastly, the Moon always begins to be Eclipsed on the West-side, the Sun on the East-side their Bodies.

Ecliptick, [so called from the Greek Verb *Ecleipo*, which signifies to fail, or want, because

under this Line, the Sun and Moon is in the middle of the Zodiack, and always suffer their Eclipses, or fail of their Light.] A Line, or rather a great Circle in Heaven, equally distant from its Poles, as the Equator is from the Poles of the World. This is called *Via Solis*, the *Sun's Way*, or Orbit, because the Sun never goes out of it; and is termed the *Ecliptick*, because all Eclipses happen therein.

Elections, [from the Latin *Eligo*, to choose.] Astrologers mean by this Term certain opportunities of Times, elected (or chosen) by Astrological Observations, as most fit for such a particular Business or Enterprise.

Elements, Lat. The first Roots or Principles of Things, as *Fire*, *Air*, *Earth*, and *Water*, whereof all Bodies are composed. So Letters are called the first Elements of Learning; and *Euclid's* Fifteen Books of *Geometry* are so called, because without being acquainted with the Principles therein laid down, no Mathematical work can be undertaken and demonstrated.

Elevated, [from the Lat. *Elevo*, to lift up.] A certain pre-eminence of one Planet above another; or, A concurrence of Two to a certain Act, wherein one being Stronger, is carried above the Weaker, and does alter and depress its Nature and Influence. But wherein this being Elevated consists, there are several Opinions; some say, when a Planet is nearest the Zenith, or Meridian: Others will have it only that Planet that is highest, or nearest to the *Apogæum* of his Eccentrick or Epicycle. And *Argol* admits of all these, and several other Advantages, and thence advises to collect the several Testimonies, and that Planet who has most, shall be said to be Elevated above the other.

Elevation of the Pole, The Heighth or Numbe of Degrees that the Pole in any Latitude is abov the Horizon.

Elipsis, Gr. An Oval, or Geometrical Figur in shape of an Egg, comprehended in one on Line, but that not Circular, nor having all i parts equally respecting the Centre: But from tw *Focus* or *Navel* points as most Geometers shew.

Elongation, Lat. The removal of a Planet t the furthest distance it can be at from the Sun commonly taken notice of in *Venus* and *Mercury*.

Emphasure, A Term used in Architecture an Fortification, To hold fast together, *&c.*

Emersion, coming forth of Darkness, as th Sun or Moon coming out of an *Eclipse*.

Embolism, A Greek word, signifying the *In terlacing*, or *putting in* of a day in the *Leap-yea* but used for the Excess of the Solar Year abo the Lunar, whereby the Lunations happen ever subsequent Year eleven days sooner than in th fore-going; which when they amount to 30 day make a new Month, called the *Embolismical Lun tion*; which must be added, to make the commo Lunar Year equal to the Solar.

Empyreum, [From the Greek word *Pyr*, signifying Fire] The Heaven of Heavens, the Throne of God, Residence of Angels, and Eternal Mansions of Saints.

Emergent, The same with *Emersion*, &c. A Planets getting out from under the Suns Beams, and becoming visible.

Enneagon, A Circle divided into 9 equal parts, or a Polygon Regular, or Figure of 9 equal Sides: So there is the *Pentagon* of 5, the *Hexagon* of 6, the *Heptagon* of 7 equal Sides, *&c.* Derived from the Greek.

Canonical { Days / or / Years, } [from the Gr. *Ennea*, Nine] Every 9th. day of a Sickneſs, or Year of a one's Life, which is thought to bring ſome great alteration in the Diſeaſe, or Mutation of Fortune. See Critical and Climacterical.

Epact, [quaſi *Epiaucta*, that is, An Augmentation, or Additional Supply] 'Tis uſed for a Number whereby we note the Exceſs of the common Solar Year above the Lunar, and thereby may find out the Age of the Moon every Year: For the Solar Year conſiſting of 365 Days, the Lunar but of 354, the Lunations every Year get 11 days before the Solar Year; but thereby in 19 Years, the Moon compleats twenty times twelve Lunations, or gets up one whole Solar Year; and having finiſhed that Circuit, begins again with the Sun; and ſo from 19 Years to 19 Years: for the firſt Year afterwards, the Moon will go before the Sun but 11 days; the ſecond Year 22 days, which is called the *Epact* of that Year; the third Year, 33 days; but 30 being an entire Lunation, caſt that way, and counts that Years Epact only 3; the next Years 14; and ſo on, adding yearly 11 days, and caſting away 30, when the Number amounts to more.

Ephemeris, [from the Greek *Hemera*, a Day] A Diary, or a Day-book; but eſpecially amongſt Aſtronomers thoſe Books which contain the daily Motions of the Planets, with their Aſpects, and other Circumſtances, for every day in the year, are called *Ephemerides*.

Epitycle, Gr. A little Circle, whoſe Centre is in the Circumference of a greater; or a ſmall Orb, which being fix'd in the Different of a Planet,

is carried along with its Motion, and yet with its own peculiar Motion carries the Body of the Planet fastened to it round about its proper Centre; which Ancient Astronomers attributed to all the Planets, for solving their Appearances, except the Sun.

Epocha, [or rather *Epoche*. In Greek It signifies a Root or Beginning] but 'tis generally taken for some remarkable Occurrence from whence, or manner whereby, some Nations Date and Measure their Computation of Time; as the *Olympiads* amongst the *Greeks*, the *Indictions* among the *Romans*, &c.

Equants, An old Term in Astronomy, now not used.

Equitrutal, Two equal Sides in a Triangle. See *Euclids* Definitions to his first Book.

Æquilibra, Any two Bodys equally Poysed or Hung.

Equal Reason. See Reason.

Equinoctial, or Equator, [From the Lat. *Æquus*, Equal, and *Nox*, the Night] A great Circle, equally dividing the Sphere into two parts, whereof one lies towards the North, the other towards the South Pole, this Circle lying in the middle, and equalling all parts. Whence by the Ancients 'tis called, *Cingulum Mundi*, the *Girdle of the World*, and also the *Equinoctial*, because those that live under it have always their Days and Nights both of a length, and so have one, and almost all the World, twice a year, when the Sun holds this Circle, entring the beginning of *Aries* or *Libra*, which are called *Equinoctial Points*, or *Signs*, for that reason; and the Times, the *Vernal*, or *Autumnal Equinox*.

Equation,

Equation, A Term used much in *Algebra*, and often in *Astronomy*, as to affirm such and such Numbers, or Letters, are Equall to others found out by Operation. And in Astronomy 'tis used for Proportions sometimes; and Equating or Regulating time from the *Sun's* Irregular Motion as to us, in Regard of the *Obliquity* of the *Ecliptick*, as Authors very well demonstrate.

To Erect a Figure, or draw a Scheme, Is only to divide the 12 Houses aright, and put down the proper Sign, Degree, and Minute on each Cusp, and the Planets in their proper places; so that your Figure may truly represent the Positions of the Celestial Bodies at that moment of time for which it is intended. See *Fig. 2.*

Errones, or **Errantick Stars**, [A Latin word, that properly signifies *Wanderers*] The Planets are usually called so, in contradistinction to the Fixed Stars, by reason of their having each a peculiar Motion, and divers respects to each other, which by such Motion they daily change; whereas the Stars of the several Constellations, though hurried daily round from East to West by the *Primum Mobile*, and back again by a most slow and imperceptible Motion of the Firmament; yet because themselves move not, but retain always the same place in the Firmament, and distance from each other, they are justly reputed, in respect of the others, Fix'd and Immovable: But these *Erraticks*, or *Wanderers*.

Essential Dignities, Certain real Advantages, whereby a Planet is fortified: as when he is in his House, or Exaltation. See *Dignities*, and a Table of them always in Mr. *Lilly's* Almanack.

Eudemon, [In Greek, *Eu* signifies Good, or Well;

Well; and *Damon* a Spirit] The *Good Genius* or *Spirit*. The 11*th*. House of a Celestial Figure is so called, by reason of its good and prosperous Significations; as, store of Friends, Attainment of Hopes, *&c*.

Even Number, Is that which may be divided into two parts; as 4, 10, 40, &c. are *Even Numbers*, forasmuch as each of them may be divided into two equal parts, whereof their halves are 2, 5, 20, &c.

Evenly Even, Is that which an Even Number doth measure by an Even Number; as 32 is said to be a Number Evenly even, because 8, an Even Number, doth measure it by 4, which is likewise an Even Number.

Evenly Odd, Is that which an Even Number doth measure by an Odd Number; as 30, which 2 or 6, Even Numbers, do measure by 15 or 5 Odd Numbers.

Evolation, Vide *Appendix*.

Exagonum, [From the Gr. *Gonia*, an Angle and *Hex*, six] A Figure consisting of six Angles but in Astronomy a *Sextile Aspect*. Hence the *Hexagon*.

Exagonal, Of or belonging to such a Figure or Ray. 'Tis sometimes written *Hexagonum*.

Exaltation, Lat. An Essential Dignity of a Planet, next in vertue to being in his Proper House. Or a place where a Planets Influence is always observ'd to be very strong; which is, where a Planet of a contrary nature is very weak; As *Sol*, the Fountain of Light, in *Aries*, which is the Fall of *Saturn*, a Lover of Darkness; *Jupiter*, Author of Justice in *Cancer*, where *Mars* the Master of Misrule is in his Fall, so ☽ in *Virgo* the Fall of *Venus*.

Venus; one ſignifying Science and Study, the other only Mirth and Pleaſures, *&c.* Thus, *Almanſor* an Ancient Aſtrologer in his *Aphoriſms* to the King of the *Saracens*.

Exhalations, Lat. Vapours drawn up from the Earth or Sea into the Air, whereof are generated all kind of Meteors, as Rain, Hail, Snow, Thunder, Lightning, Comets, Falling Stars, *&c.*

Extraction of Roots, *Radix*, or the Root, is the ſide of a Figure, or a Number which being multiplied in it ſelf, makes the Powers of that Number. And the *Extraction* is but the unravelling of a Power (or Number propoſed as a Power) to find the Root.

Hence the Extraction of the *Square Root* is the finding a Number, which being multiplied in it ſelf, ſhall make a propoſed Number.

And the Extraction of the *Cube Root* is the finding a Number, which being multiplied twice in it ſelf, may equal a given Number.

Alſo the *Extraction of a Biquadrate Root*, is by the untwiſting of a given Number to find another, which being multiplied in it ſelf, and again that Product in it ſelf, may make the firſt given Number, *&c.*

Extream Reaſon; A Right Line is ſaid to be divided according to Mean and Extream Reaſon, when as the whole is to the greateſt Segment, as the greateſt Segment is to the leſſer. See the Demonſtration in *Euc. Elem. 6. Def. 3.*

Exuberous Body, Lat. A ſwelling Body, or bulging out; as the knobs on Galls are *Exuberances*.

F. Fact,

F

Face, The third part of every Sign ascribed to some Planet, who has therein one Essential Dignity. See *Decanate*.

Fall, The *Fall* of a Planet is the Sign opposite to that wherein he is Exalted; in which he is said to suffer a *Debilitie*.

Face of the Bulwark of a Battalion, &c. Or of a Bastion; common Terms in Fortification and Military Discipline. See Sir *Jonas Moore*'s Works and others.

Feral, (or Beastly.) From the Lat. *Fera*, a Wild Beast. The Signs so called are ♌, and the latter part of ♐. Not only because they are called and painted as wild Beasts, but because they have really some kind of Savage Influence, and give fierce and cruel Manners to a Native born under them especially if the Luminaries be therein, and the Malevolents in Angles. The Moon is also said to be *Feral* by some Authors, when she is *void of Course*, that is, has seperated from one Planet and applies to no other whilst she remains in the same Sign.

Fern. See *Goldman*'s Dictionary.

Figure, Is defined by *Euclid. Lib. Def.* 14. to be a quantity included under such or such terms or bounds. As a Plain Figure, a Spherical Figure, &c. But in Astrology 'tis taken for a Scheme or Draught of the *Face of Heaven* at some determinate time.

Figurate Number, Is a Number made by the multiplication of one Number or more by another.

Fire

Fiery Triplicity, Are such Signs of the *Zodiack* as excel the rest in Fiery Qualities, *viz.* Heat and Drieness, which are ♌, ♈, and ♐.

Fly, See use of *Mathematical Instruments.*

Flux and Reflux of the Sea, or the Ebbing and Flowing thereof.

Flank, A Term in Fortification and Military Discipline.

Fraction, From the Latin, *Frango*, to break. A broken Number expressing so many parts of a whole, as ½ two fourths, that is, one half of any thing.

Frigid [or Frozen] Zones, the space between the Poles of the World, and the Artick and Antartick Circles respectively, imagined by the Ancients, to be altogether uninhabitable, because of its excessive Cold.

Finitor, [From the Lat. *Finis*] the Bounder or End. The Horizon or great Circle dividing the upper Hemisphere from the lower, is so called, because it bounds our Sight, which conceives that there the Earth and Heavens meet.

Firmament, The Eighth Orb, or Heaven of the Fixed Stars.

Fixed Signs, Are ♉, ♌, ♏, and ♒, so called, because the Sun passes them respectively in the middle of each Quarter, when that particular season is more settled and fix'd than under the Sign that begins or ends it. Thus the Spring wholly prevails when the Sun's in ♉. Summer when in ♌. Autumn when in ♏. And winter when in ♒. Besides their Nature and Influence tends more to Stability and Duration, as may be observ'd in Planting of Trees, Buildings, &c.

First Mover. See *Primum Mobile.*

Forti-

Focus, The Navel or a Centre points to draw the curv'd Figure, called an *Elipsis*, much like to an Oval Figure in form.

Fortification is also called *Military Architecture*, Regular, and Irregular: The Art of Fortifying a Town, to Defend it against an Enemy.

Fortstaff, or **Crosstaff**, An Instrument at Sea, for observing the Sun or Stars, *&c.* with ones face towards the Object.

Fortitudes, [From the Lat. *Fortitudo*, Strength.] Certain Advantages which Planets have to make their Influences more strong, by being so or so Posited, Qualified or Affected. See *Dignities*.

Fortunes, The two benevolent Planets ♃ and ♀, by reason of their kind and friendly Nature, are generally so called. As ♄, and ♂ for a contrary Nature, are called *Infortunes*.

Fruitful, [or **Prolifick**] Signs, are ♋, ♏, and ♓. The meaning is, if one enquire if he shall have Children, and the Moon and principal Significators be in any of these Signs, and strong, there is no doubt but he will have Issue.

Frustum, A Latin word signifying a Bit, or Piece cut off, or separated from any Body: As the *Frustum* of a Cone is a part or piece thereof. See *Segment*.

Frustration, [From the Lat. *Frustro*, to prevent, or make void.] Is a kind of *Debility* which happens to a Planet when he is applying to the Conjunction of another, being within Orbs; but before they are Corporally joyn'd one of them becomes *Retrograde*, and so he is *frustrated* of his End.

Fulgens, Shining, Glistering.

Fundamental Diagram, Or a Projection of the Sphere in *Plano*, *&c.*

Fur-

Furlong, The Eighth part of a Mile, or Forty Rods.

Furniture of a Dial, Such are the Parallels of Declination, Length of the Day, Azimuths, or Points of the Compass; the Planetary Hours, *Babylonish* and *Jewish* Hours, *&c.* for Ornament.

G

Gage, or Gaugt-point, is a Term in Gauging, discours'd by most Authors. See *Sturmy*, Book 5. Fol. 24. and most Authors of that Subject.

Galaxia, [A Greek word, from *Gala*, *Galactos*, Milk.] See the Milky way.

Gemini, A Latin word signifying Twins.] The third Sign in order of the *Zodiack*, the House of *Mercury*, Common, Airy, and Humane. And note this Constellation of ♊ like the rest, is gone back out of its place in the 8th Sphere since *Ptolemy*'s time, and begins at 25 ♊, and is extended to the 25 of *Cancer*.

Genesis, } The first a Greek, the second a Latin
or } word, both signifying the Birth or
Geniture, } Nativity of a Man, but more used for the Figure of Heaven artificially erected for that moment of time when an Infant is brought into the World. Hence Genethliacal, of or belonging to such Geniture or Figure.

Geocentrick, [From the Greek *Gè*, the Earth, and *Centron*, the Centre.] Any Planet or Orb that has the Earth for its Centre, or the same Centre with the Earth.

Geo-

Geodæsia, Gr. The Art of Measuring Land, or Surveying.

Geography, [From the Greek *Ge*, the Earth, and *Grapho*, to write, or describe.] A description of the habitable World, or a general Survey of the whole Terrestrial Globe, containing the Scituation of all Countreys and Continents, distance of Places each from other, *&c.*

Geometrie, [A Greek word, from *Ge*, the Earth, and *Metron*, measure,] signifying no more in a strict sense, but *Measuring of the Earth*; and therefore was anciently used for the two words last explained; but now it has been long appropriated to the most noble of all the Mathematick Sciences. The Consideration of *Continued Quantity*, or Sensible Magnitudes, whose parts, though never so vast or remote, by its Demonstrations are understood and exactly measur'd; so that indeed it has the whole Universe for its Object. And therefore the profound Dr. *Dee* would rather have it called *Megethologia*, (from the Greek *Megethos*, Magnitude, and *Logos*, Speech or Reason) that is, the consideration of Bulk, or all kinds of Magnitudes, rather than that narrow name of *Geometry*: Of which there is two Sorts, *Practical* and *Speculative*; of both which Authors do treat very copiously in several languages.

Geomancy, An Art that teaches to resolve Questions, and foretel things to come, by certain Circles or Pricks made in the Earth; but now it is performed somewhat after the manner of *Astrology*, by Figures on Paper. See *Cattens* Book of this Art. 'Tis derived from *Ge* and *Mantia*, A Divination, whence also comes *Necromancy*, and other the like words.

Glass of Life. See *Alcochoden*, or *Hylech*.

Globe, is properly, *A solid Body, exactly round, comprehended under one Surface*; such as the Bodies of the Planets, the Earth, &c. But the word is now usually attributed to Two Artificial *Representations* of Heaven and Earth; of which, one called the *Celestial Globe*, shews the several Constellations and Stars, the Circles, Longitudes, and Latitudes of each part of Heaven, fitted with their Horizon and Meridian to every Elevation of the Pole, &c. The other named the *Terrestrial Globe*, discovers on its Surface the Description of the whole Earth and Sea, with its Meridians and Parallel Circles, &c. whereby the Longitude, Latitude, and Distance of Places from each other, may be presently understood.

Gnomon, [A Greek word, signifying a *Shewer*, or *Discoverer*, but used for] the *Pin*, or *Cock*, or *Style* of a Dial, the Shadow whereof pointeth out the Hour. Hence it is called the *Style* or *Gnomon*, and this last word is used also in Extraction of Roots. See *Euclids Elements*.

Gnomonice, The *Art of Dialling*, or that part of Astronomy, which by the Shadow of the Sun, and sometimes the Moon, artificially made, measures their Course, and the space of Time, in Hours or otherwise, which elapses during the same, and plainly exhibits it to our view.

Golden Number, (so called, because for its great use it was yearly set up publickly in Golden Letter) Is an Artificial Revolution of a Nineteen years Circle, distributed for the years following from One to Nineteen, and then beginning again.

To find the Golden Number, add one to the Year of our Lord, and divide by 19, the Remainder

is it; but if none remain, then 19 shall be the Golden Number. It was first invented to find out the Lunations and Moveable Feasts; but at this day 'tis very insufficient: and therefore *Origanus* merrily says, Since it will no longer perform its business without gross error, instead of Golden, he'll call it the *Leaden Number*.

The Golden Rule, The Rule of Three is so intituled, by way of Excellency in Arithmetick, teaching from three Numbers known, to find out a Fourth unknown, perform'd by multiplying the Third Number by the Second, and dividing the Product by the First, the Quotient gives the Fourth Proportional Number sought for.

Gorge, Is a Term in Fortification belonging to a Fort or Battery upon which to Plant Guns to defend the place, from the Assault of an Enemy, as all Authors thereof plainly demonstrate.

Great Circles, Are such as divide the Sphere or Globe into Two equal Parts, and are commonly accounted Six in number; *viz.* the *Horizon*, the *Meridian*, the *Equinoctial*, the *Ecliptick*, and the two *Colures*.

Great Circle-Sailing, Which directs a Ship the nearest Course between two places, in the Arch of a Great Circle, would the Winds favour to keep therein.

Gregorian Year, The New Account, or New Style, instituted upon the Reformation of the Calendar, by Pope *Gregory* the *13th*. (from whom it takes the Name) *Anno Domini*, 1582. wherein ten days being then taken out of the Month *October*, the days of their Months go always ten days before ours, as their *11th*. is our first day. Which New Style or Account is used in most parts beyond

beyond the Seas, and does much better agree with the Solar Year, but yet not exactly. How to do it infallibly for ever, see a small Treatise, Intituled, *The Jewish Calendar explain'd*, written by *H. Care*, and some years since published.

Gravity, The Centre thereof, is a Term in *Mechanicks*, and is a point upon which the weight of a Body (or Ponderosity) bears, or is equally poiz'd, as you may read in Authors that treat of *Mechanicks*, *viz.* of the use of the *Wedge*, the *Screw*, the *Pully*, the *Leaver*, &c. See Dr. *Wallis's Lectures of Mechanicks*, &c. Lat.

Gunter's { Chain, Quadrant, Rule, Scale, and Sector: } All useful Mathematical Instruments, invented, or much improved by that famous Mathematician, Mr. *Edmund Gunter*, sometimes Professor of Astronomy in *Gresham College*, *London*, and from him bearing their Names. The Descriptions and several Uses of all which, being not to be declared in a few words, and already set forth by himself, I shall thither refer the *Philo-Mathematick* Reader.

Gyre, A whirling Motion, or swift Turning round, such as we see in the Flie of a Jack, *&c.* The word is Originally Greek, but used in Latin in the same sense.

H

Hals, or Halo, A Circle about the Sun, Moon or Stars, with a seeming brightness like Rays, being thick Vapours, not resolved, but gathered together into that part of the Air above which the Star is; and so inlightned by its beams, appear like a bright Ring round about the Body of the Sun or Star. See *Parhelia*.

Harmony, A word proper to Sounds that are made in that kind of proportion, *viz.* Harmonical, which is different from that of Arithmetical and Geometrical proportion, which is illustrated by most Authors of Arithmetick, and in particular, consult *Blundevil's Exercises*, who is very copious in this kind of Proportion.

Hayz, An *Arabian* word, used in Astrology, to signifie a certain Dignity or strengthning of a Planet, by being in a Sign of his own Sex, and a part of the World agreeable to his own Nature; as when a Masculine and Diurnal Sign is in the day-time above the Earth, and in a Masculine Sign. Or a Feminine Nocturnal Planet, in the Night, in a Feminine Sign, and under the Earth: but if he be only in a Sign of his Sex, and under the Earth in the day-time, being a Diurnal Planet, then he is said to be in his Light, but not in *Hayz*.

Heart of the Sun. See *Cazimi*.

Heighth of a Figure, Is the Perpendicular Line drawn from the Top of the Base. See the Explanation in *Eucl. Elem.* 6. *Def.* 4.

Heighth

Height of the Pole, See *Elevation of the Pole*.

Heliacal Rising, [or a Rising of a Star from the Sun] Is, when a Star having been under the Sun-Beams, gets from the same so as to be seen again. And Heliacal Setting is, when a Star, by the Near approach of the Sun, first becomes inconspicuous. This is reckoned in the Moon but at 17 Degrees distance, or thereabouts; but in other Stars it is so as they get distant, or come near the Sun by the space of a whole Sign.

Helicosophy, [From *Helix*, a Spiral Line, and *Sophia*, Wisdom, Craft, or Skill] An Art Mathematical, which demonstrateth the designing of all Spiral-Lines *in Plano*, as Cylinder, Cone, Sphere, Conoid, And Spheroid, and their Properties appertaining. The use whereof in Architecture, and divers Instruments and Engines, is most necessary; for in many things the Screw worketh the Feat, which else could not be performed.

Heliocentrick Longitude or Aspects, so called, as arising from *Helius* or the *Sun*, Respecting the *Sun*, the Centre of the Universe, according to the *Copernican System* in Astronomy, &c.

Helix, A Greek word, signifying a winding Spiral Figure, or a crooked Line, which is unequally distant from the right of the Spaces, howsoever inclosed.

Hemisphere, [half the Sphere] Generally taken for one of the two parts made by the Horizon, dividing the Heavens into two Segments, whereof one is always conspicuous to us, the other not to be seen.

Heptagon, [From the Greek *Hepta*, seven, and *Gonia*, an Angle] A Figure of seven Angles,

whence *Heptagonal*, an Adjective, of or belonging to such a Figure.

Heteroscii, A Greek word, often used among Cosmographers, which signifies only, People that have their shadows cast but *one way* at Noon, such are we *English*, and all the Inhabitants of the Temperate Zones, *viz.* on either side the Equator from the Tropicks to the Arctick and Antarctick Circle; our Shadow at Noon being to the North, theirs to the South. Whereas they that live between the Tropicks, cast their Shadow now one way, and then another, and once a year have no Shadow at all at Noon, the Sun being Vertical, or right over their heads.

Hexagon, or Exagonon; A Figure that consists of six Angles, or a Sextile Aspect. From *Hex* six, and *Gonia*, an Angle.

Heterogenial, Of a different kind, not alike, not of the same nature; from the Greek *Heteros*, another, or different; and *Genos*, a Kind or Race.

Holometrum, [The General Measure, or Measure of the whole] A Mathematical Instrument for the easie Measuring of any thing; invented by *Abel Tull*, who published a Book of its use. It is derived from *Holos*, the whole, and *Metrum*, Measure, in Greek.

Homocentrick, Having the same or a like Centre. See *Concentrick*; from the Greek, *Homos*, alike, and *Centron*, a Centre.

Homogenial, [from the same *Homos* and *Genos*] Of the same kind or sort, alike, that which differs not in Nature, agreeable, &c.

Homologal, Agreeable, or alike to one another in Reason: As when we say, There is the same Reason of A to B, as of C to D. Here A is Homologal

nological to C, as B to D, because of the similitude between Antecedents and Consequents.

Horary Question, A Question ask'd at a certain Hour. 'Tis a Term used in Astrology, when one goes to an Artist, and propounds a Question to him, he presently erects a Figure for that Hour, in which you declare your mind, and from the face of Heaven at that time, pretends to resolve you. A Horary Question being the Birth or Delivery of the Mind, as a Nativity is of the Body, and if it be Radical, and soberly ask'd of a discreet Artist, there may be no contemptible satisfaction obtained by it.

Horizon, [From the Greek word *Horizein*, to Bound, Enclose, or Terminate] A great Circle in the Sphere, so called, because it bounds our sight, and divides the upper Hemisphere, or part of the Heaven which we behold, from the other lower part, which is inconspicuous. More plainly, It is the Circle where the Heavens and Earth seem to meet, as far off as you can see when you turn your self about at Sea, or in an open field: And above which, when the Sun or any Star comes, 'tis said to Rise; when it goes below it, to Set. But yet more particularly, the Horizon is to be considered two manner of ways.

Firſt, the Natural Horizon.

Secondly, the Mathematical Horizon.

The firſt is that apparent Circle we have just now described. But the second, which is oftner made use of in the Doctrine of the Sphere and Astronomy, is a great Circle which divides that part of Heaven which we call above us, from that which is counted under us, precisely into two equal parts, whose Poles are the *Zenith* and *Nadir*;

dian, in which Circle, the Azimuths or Vertical Circles are numbered, and likewise by it our Days and Nights measured out unto us, for while the Sun is above the Horizon, it is Day; and when under, Night.

Horizontal Line, Any Line drawn parallel to the Horizon, upon a Plain or Dial.

Horizontal Projection, A Projection of the Sphere in Arches of Circles, called *Stereographick*, wherein the Sphere is pressed into the Plain of the Horizon, and the Meridians and Parallels of the Sphere projected thereon.

Horologiography, The Art of Making, or Treating of Clocks, Dials, and other Instruments to tell the time of the Day. From *Horologium*, a Clock or Dial, and *Graphe*, to write or Treat of.

Hourometrie, [From the Greek, *Hora*, an Hour, and *Metron*, Measure.] The Art of Measuring or Dividing Hours, and keeping Account of Time.

Horoscope, [From the Greek, *Horos*, the utmost bounds of a thing, and *Scopeo*, to view, watch, or look abroad as far as one can.] The Angle of the East, or that part of Heaven which Arises every moment from the lower Hemisphere to our sight exactly East, the Ascendant, or first House; but more properly, the Sign and Degree on the Cusp of that House. And since the same have very great signification of the Constitution, Corporature, and Manners of a Native, 'tis used in Authors sometimes for the General Fate of Man's Life. It differs, as you may perceive, from Horizon, because that is the whole Circle round about, this only that point of the Ecliptick which lies in the East.

Hour-Circle, Is part of the Furniture of a Globe, being a small Brazen Circle fitted on the Meridian,

whose

whose Centre is the Pole of the World, divided into 24 Hours, which in a Revolution of the Globe, are all pointed at with an Index for that purpose, fitted on the Axis of the Globe. See my *Tutor to Astronomy*, p. 6.

Houses of Heaven, A Twelfth part of the Heavens, considered in the situation of the World, is called a House. For Astronomers divide the whole Sphere into Four equal parts, by the Meridian and Horizon, and each of these Quadrants into Three other parts, thereby making Twelve Divisions of the whole, which are called *Houses*, which are reckoned in order, contrary to the Motion of the *Primum Mobile*. As, the first House is the Horoscope, the second, not that which the Stars come to next above the Earth, but that towards the North, under the Earth. Of the reason for this division of the Heavens, and why such a particular Signification is ascribed to each House, see *Morinus*, in *Astrologia Gallica*, or that exquisite Tract by Mr. *Coley*, in *English*, called, *The Key to Astrology new Fitted*.

Hygroscope, A Glass, foretelling Drought and Moisture, by Mr. *Flamsted*.

Humane Signs, Are counted amongst Astrologers not only those Signs of the Zodiack, which have, as it were, the form of Man, *Gemini*, *Virgo*, *Aquarius*, and the first half of *Sagittarius*, but also such Asterisms without the Zodiack, as are usually represented in humane shape, as *Perseus*, *Andromeda*, *Cassiopea*, *Cepheus*, *Orion*, &c. It being found by experience, that the same were not either casually or fantastically ranged in such Figures, by the wisdom of the Ancients, but by reason of a certain Affinity, Connexion, or Sympathy

pathy which they had with Mankind. Hence the common Axiom in Astrology, *The meeting of the Infortunes in a Humane Sign, especially in the 8th. House, causes the Pestilence, and great Mortality amongst men.* And that of *Ptolomy*, in *Centiloquio*, *Whoever has neither the Lords of his Geniture, nor the Ascendent, in Humane Signs, will himself be a stranger to Humanity, or of churlish savage behaviour.*

Hydrography, [From the Gr. *Hydor*, Water, and *Graphe*, to Write or Treat of] An Art conversant in the Description and Measuring of the Sea, or great Waters; teaching how they may be Sail'd, or pass'd over with greatest convenience; the Nature of Bays, Rocks, Shelves, Coasts, Tides, Soundings, and other Remarkables on the Coasts; what Winds they lie obnoxious to, how far in a Right Line one Port is from another, &c.

Hyleg, or Hyleth, An *Arabick* word, signifying The Giver of Life; A Planet, or part of Heaven which in a Man's Nativity, becomes, in an Astrological sence, the Moderator or Significator of his Life. Hence

Hylegiacal Places, Are such, as when a Planet happens to be posited therein, he may be said to be *Hyleg*, or fit to have the Government of Life attributed to him; which places are generally reckon'd five, *viz.* The Ascendent, the Mid-Heaven, the 7th. House, the 9th. and the 11th. House. Also the *Sun*, *Moon*, and *Part of Fortune*.

Hyperbola, Hyperbolical, A curved Figure used in solid Geometry. See Mr. *Anderson*'s *Stereometrical Propositions* in *English*, to be had at the *Black Raven* near to St *Andrews* Church in *Holborn*.

Hypobibasme, A Term in Algebra.

Hypogon,

Hypogeon, [under the Earth, from the Greek Preposition, *Hypo*, under, and *Ge*, the Earth] but especially the *4th.* House, or *Imum Cœli* is so called.

Hypotenusa, [A Greek word, properly signifying, A Line drawn under] but used by Geometricians, when a Right Line is drawn under two Right Lines, that make a Right Angle, and of which one is bigger than the other, then the Line subtended (or *Hypotenusa*) must needs exceed each of them in length. As in Fig. 5. the Line B C is the Line *Hypotenusa* to the Line A B and A C.

Hypothesis, Gr. A Supposition, a Sentence laid down, and taken up for granted for Arguments sake, or to be discoursed of. So the several Models of the World conceited and delivered by *Ptolomy*, *Copernicus*, *Tycho*, &c. are called such an one's *Hypothesis*.

I

Jacobs staff, A Mathematical Instrument for taking Heights and Distances. See *Cross-staff.*

Ichnography, [From the Gr. *Ichnos*, a Pattern, and *Grapho* to Write] The Art of making of Models of Building, a Plat-form, the Plot of a House to be built, drawn out on a Paper, describing the Form of all the Rooms, Lights, Chimneys, &c. according to which form the Workman goes to work. See *Vignola's Comompleat Architect*, in the Preface.

Icosaedron, Gr. A solid Figure, contained under

der twenty Equal and Equilateral Triangles. T
one of the five sorts of Regular Bodies; so called
becanse all the Plains wherein they are contain
are Equal, Equilateral, and Equiangular. The
are by some term'd *Platonical Bodies*, becau
Plato in *Timeo*, compares the Simple Bodies of th
World, Fire, Air, Water, Earth, and Sky, to the
The other four are, *Cube*, *Tetraedron*, (or fo
Triangles,) *Octaedron*, (or eight *Triangles*,) an
Dodecaedron (or twelve *Triangles*.)

Ides, See *Calends*.

Ignis fatuus, [Lat. a foolish Fire.] A
with a Lanthorn, or *Will with the Wisp*. An in
halation, or light, frequently seen in Meadow
Church-yards, &c. supposed to lead people out
the way; by reason of its irregular skipping
and down, (as Fools use to do) according as th
Air is agitated, 'tis called *Fatuus*.

Impure Logarithm, Or a *Defective Logarithm*
or the Logarithm of less than Unity.

Imum Cœli, [Lat. the bottom of Heaven.]
The fourth House in a Figure of the Heaven
called also *Fovea*, [the Ditch,] and Angle of th
Earth.

Incidence, [Lat. A Falling upon] the pla
where two Lines or Rays meet, or light one up
the other.

Inclination, [Lat. A bowing downward, o
leaning awry] but when we speak of the Inclina
tion of a Planet, we mean its motion towards such
or such a Point in Heaven.

Incommensurable *Quantities*, are those which
have no *Aliquot* part, or any common measure
that may measure them: As is the Diameter of
a Square, and the Side of the same Square. For
although

although that each of those Lines have infinite *Aliquot* parts, as the half, the third, and other parts; yet not any part of the one, be it never so little, can possibly measure the other; as is demonstrated, to *Elem. Propos.* 117. by *Euclid.*

Increas'd in Number, [*Auctus Numero*, in Latin.] A Planet is said to be so, when by his proper motion he exceeds his mean motion. See *Auctus.*

Index, [Lat. A Shewer, or Discoverer.] The Table of a Book. In *Musick*, *D. Sol Re.* in the *Gamut.* The longer piece of Wood of the two in a *Jacobb's Staff.* In a *Globe* 'tis a little Ruler to be put upon the Pole, pointing out the time on the Hour-Circle.

Indition, Lat. The space of fifteen years, in which space the *Roman Tribute* throughout all the Empire being Indicted, that is, appointed and limitted to be paid in, they therefore used to reckon and date their Writings such a year of the *Indition.* To find this year of the *Indiction* for any year of our Lord, Add 3 to the year of our Lord, and divide by 15, what remains besides the Quotient, is the year of the *Indiction*; if nothing remain, then 'tis 15.

Individible, A Term in Speculative Geometry, shews the thing cannot be divided; the same in effect with *Enclids Incommensurables.*

Infortunes, *Saturn* and *Mars* are so called, because of their malevolent Natures, and unfortunate Influences.

Infigned Stars, [That is, without form.] Such of the Fixed Stars as are not cast into, or ranged under any Constellation, or form. See *Specular.*

Ingress,

Ingress, Lat. An Entrance upon, or going in to; 'tis used chiefly in Astrology, for the Sun entring the first Scruple of one of the four *Cardinal Signs*, especially *Aries*, which they account the Annual Revolution of the World.

Inordinate. See (*Rare.* 37.)

Inscribed Bodies, Is the 5 Regular Bodies.

Inscribed Figure, *Eu.* 4. *Def.* 1.

Integer; [Lat. Whole, Entire, or Compleat.] In Arithmetick a whole Number: As one pound, whereas ¼ four fourth parts of a pound signifies the same thing, and is only a way of expressing that *Integer* by Fractions.

Intercalary day, [From the Lat. *Inter*, between, and *Calo*, to call, or insert.] The odd day put in, or inserted in the Leap-year, whereby the 6th *Calends* of *March* (that is with us the 24th of *February*) was reckon'd twice.

Intersection, A cutting off, a chopping of one Line upon, through another. From *Inter* between, and *Seco*, to cut.

Interruption. See the *Appendix*. Also the Term Involution, at the end of this Book.

Inverse. See *Transposed Reason*.

Ionick, From *Ionia*, a Province in *Greece*. One of the Five Orders of Architecture, or Artificial modes of Building, there first practised. See *Vignola's Compleat Architect*, p. 38.

Jove. See *Jupiter*; *Jovis* being only the *Genitive Case* thereof.

Joys of the Planets, Are certain Dignities happning to them, either by being in the place of a Planet of like Condition and Nature, as the *Sun*, in houses of *Jupiter*, *Saturn* of *Mercury*, *Venus* of the *Moon*, &c. or in a house of the Figure agree-

agreeable to his own Nature. Thus ♄ delights in the 12 House, ♃ the 11th, ♂ in the 6th, ☉ in the 9th, ♀ in the 5th, ☿ in the Ascendent, and the *Moon* in the third.

Iris, Greek, The Rain-bow, called also by the Ancients, the Daughter of *Thaumatis*, that is, Wonder, from the admirable variety of Colours therein.

Irrational Lines, Such as are Incommensurable to a Rational Line supposed in Length and Power, and not in Length only. So Figures Incommensurable to the Rational Square, may be called **Irrationals**, or *Surds*. In like manner the Reason that is between Quantities Incommensurable, is called *Irrational Reason*. For further Light, see the word **Reason**.

Isagon, A Figure consisting of equal Angles; From the Gr. *Isos*, equal; and *Gonia*, an Angle.

Isoperimetræ, From the same *Isos*, and *Perimetros*, a Circuit. Figures that have equal Circumference, or Contents.

Isosceles, [A thing of equal shanks.] A triangular Figure in Geometry, having two Sides only equal, but the third bigger or lesser than either of them.

Julian Year, The old Account instituted by *Julius Cæsar*, which to this day we use in *England*, in contra-distinction to the New Account, framed by Pope *Gregory*.

Jupiter, [The *Genitive Case* in *Latin* being *Jovis*, we often call him *Jove* in *English*.] One of the seven Planets, placed above *Mars*, and next to *Saturn*, he is counted the greater Fortune, being of a benign temperate nature, and makes his Revolution in about 12 years, and 312 days, having the

the Sun for his Centre, as the learned *Tycho* observed. By *Galileus* and others assisted with the *Telescope*, notice has been taken of four Stars guarding and waiting upon this Planet's Body, in several *Epicycles* observing him for their Centre; being now further off, now nearer to him, sometimes hidden by him, *&c.* and yet their motion not equal; for one of them is observed to Compleat its Revolution in one day and about 18 hours, the second in three days and almost 14 hours, the third in seven days and 4 hours, and the last in sixteen days and 18 hours. Some call this Planet *Jupiter*, as it were would say, *Juvans Pater*, an *Helping Father*, by reason of his kind Influences.

K

Kalends. See *Calends*.

Kalendar. See *Kalendar*.

Katotyche, [Gr. Evil Fortune.] The 8th House of a Figure is sometimes so called, from its bad significations; as Diseases, *&c.* and being the most Abject part of Heaven.

Knot, Every Log-line should be divided into parts, and every of those Divisions are distinguished by *Knots*, which ought to be 50 Feet asunder, and this Line is frequently used by Sea-men with their *Log*, mentioned in its proper place.

The rest look in the Letter G.

L

Latitude, [Breadth or Width.] A Term used both by Astronomers and Geographers.

In *Astronomy*, 'tis the space that any Planet, or other Star does, or can wander from the Ecliptick towards either of its Poles: And as this deviation is either towards the North, or South, so it takes the denomination of North or South Latitude. Note, the Sun going on always in the very Ecliptick, can never have any Latitude, nor can it be above 9 degrees in any other of the Planets; but in fixed Stars it may be greater and greater, even to 90 degrees, that is, to the very Poles of the Ecliptick. Nor did the Ancients think it could be above 6 degrees in any Planet; but experience in ♂ and ♀ proves the contrary.

In Geography, the distance of the Equator from the Vertex (Zenith or Point of Heaven right over Head) of any Countrey or City, is called *The Latitude of that place*; or more plainly, 'tis *An Arch of the Meridian comprehended between the Equator and the Place enquired after*; numbred on the Meridian from the Equator both ways, *viz.* North and South, till it come to the Poles, or 90 degrees; and agrees with the Elevation of the Pole above the Horizon; as the Elevation of the Equator above the Horizon agrees with the distance of the Pole from the Zenith.

Legs, in Trigonometry, signifies the shortest sides in a Right Angled plain Triangle.

Lemma, A Greek word that signifies an Assumption, or the Title or Argument in a Mathematical Author of what he intends to Treat.

Leo, [Lat. The Lion.] The Fifth Sign in the Zodiack, thus characteriz'd ♌. 'Tis the House of the Sun, who therein causes the greatest heats, being of the fiery Triplicity, hot, dry, and barren, and therefore was called *the Lion*, for the resemblance it had to the nature of that Royal Animal.

Level, An Instrument used by Carpenters and other Mechanick Artificers, called in Latin, *Libra*, or *Libella*, a Ballance: The use of it is for the trying or examining of a Plain or Floor, whether it do lye parallel to the Horizon or not: As the Plumb-rule is for trying of an erect Perpendicular, as a Column-Pillar, *&c.* whether it stand right or not.

Libra, [Lat. The Ballance.] One of the Signs exactly opposite to *Aries*, thus mark'd ♎; and called so, because when the Sun enters thereinto he makes the days and nights even, as if they were pois'd in a pair of *Scales*. 'Tis the House of *Venus*, and Exaltation of *Saturn*, Airy, movable, hot, moist, *&c.* *Ptolemy* observes that persons born under this Sign, are of good Countenance and pleasing Manners; but for the most part, the cause of their own deaths.

Light of the Time, Is the Sun in the day-time and the Moon in the night: For so we know they were Originally appointed, *the Sun to Rule by day, and the Moon by night*.

Light, A Planet is said to be *Light*, that is, nimble or quick, compared to another that moves slower: As the Moon in respect of all the Planets

The

The Sun in regard of the 3 Superiors. But absolutely the 3 Inferiors, *Venus*, *Mercury*, and the *Moon*, are called *Light*, and the Superiors *Ponderous*, [or heavy,] because generally their Diurnal motion does not exceed that of these; though sometimes when ♀ and ☿ are retrograde, or stationary, the Superiors move faster than they.

Limbus, [A Latin word signifying a Border, or Fringe,] used by Astronomers for the outermost Limb of an *Astrolabe*, or the like Geometrical Instrument, in the Plane whereof are inscribed the hours and degrees thereunto answering, the names of Winds, *&c.*

A Line, *Is a Length void of Breadth*, or as others define it, the *Flux of a Point* conceived to move from place to place, *Length* being the proper difference of a Line, as *Breadth* is of a Superficies, or *Solidity* of a Body; yet is there not such a Line without Breadth in any material thing. But as the Point, so the Line which we draw, is the Sign of that which we Conceive in mind: For if the Point which we Conceive be moved, and leaveth an Imaginary Tract, that shall be a Line; *Long*, by reason of the motion, but not Broad, because the Point from whence it proceedeth, is void of all Extension.

Line of Defence, A Term in *Fortification*.

Line of Numbers, Lines, Chords, Tangents, Secants, Sines, Versed Sines, *&c.* now in great use, of which you may consult Mr. *Gunter*'s *Work*, a Book well known to all Mathematicians.

Line of Incidence, A Ray starting from some Luminous Body, and ending on a Point of some Superficies; the knowledge whereof is chiefly ne-

cessary for finding out the Greatness and Duration of an Eclipse.

Line of the mean Motion, A Right Line terminating the mean motion or place of a Star, which in an Epicycle is imagined to be drawn from the Centre of the World to the Centre of the same Star; but in the Eccentrick from the Centre of the Eccentrick, by the Centre of the Star to the Ecliptick.

Lineate. See *Ramus, Lib.* 8. *Prop.* 21.

Logarithms, [Derived from two Greek words, *Logos*, Reason, and *Arithmoi*, Numbers,] Are *Artificial Numbers* invented by Arithmeticians, to the end that being put in the place of Natural Numbers, they may be fit to manifest what Progressive difference there is in them: For they always keep in themselves the same Progression Arithmetical, as those in whose stead they are Constituted, do Progression Geometrical. Hence it comes to pass, that when 4 Numbers have proportion one to the other, the Sum of the Logarithms of the first and last shall be equal to the Sum of the 2 middle ones. As for Example, take two Numbers, 4 and 8, where one is as big again as the other. Hence the like proportion shall be between all Numbers doubly as big as each other: As between 5 and 10, 12 and 24, 24 and 48, 50 and 100, *&c.* And therefore the Logarithms of the Numbers, 4 and 10, 4 and 24, 4 and 48, 4 and 100, added together, will be equal to the Aggregate of the Logarithms, 8 and 5, 8 and 12, 8 and 24, 8 and 50, *&c.* The use of these Logarithms is very excellent, both for ease and saving of time; for whatever can be done by the Golden Rule by a wearisome Calculation, and tedious Circuit through

through Multiplication and Diviſion, that a 4th Number unknown, may be found out from 3 known; this by Logarithms is performed at one ſingle operation: For if 2 Numbers be to be multiplied, take their Logarithms, and you have your intent only by Addition: If to be divided, you need only uſe Subſtraction. For Example,

43	Log.	1, 633468
25	Log.	1, 397940
1075	Log.	3, 031408

Would you multiply 43 by 25; ſet down thoſe Numbers, and againſt them ſet their reſpective Logarithms. So the Logarithm of 43 is 1, 633468, of 25 is 1, 397940, which added, make 3, 031408. Which Logarithm being found in the Table, the abſolute Number anſwering thereunto is 1075. And ſo much is the Product of 43 multiplied by 25.

There are Logarithms Pure and Impure, or Logarithms of Mixt Numbers and Fractions; of which you are amply informed in *Gunter*, or Dr. *Newton*'s Works, *&c.*

Logiſtica, [Being of the ſame derivation with the laſt Word:] Is a part of Arithmetick, which applies the Rules of Computing, Multiplying, and Dividing, to Degrees of Signs, Circles, and Angles; as alſo to Days and Hours, Minutes of Degrees or Hours, *&c.*

Longemetica, The meaſuring of Lengths, Heights, Diſtances, *&c.*

Log-line. A Line frequently uſed at Sea by all Sea-men; they often in Sailing Heave the *Log*,

the better to find out the Distance or Way the Ship runs by help of this and their Minute-Glass, as all Authors plainly shew.

Longitude, [Lat. Length] Is considered in a two fold respect: Either by Astronomers, and then 'tis reckon'd in the *Ecliptick*, from the first Degree of *Aries* to the last of *Pisces*; and this by Circles passing by the Poles of the *Zodiack*, and each of its Degrees at opposite places. So that the Arch of the Ecliptick intercepted between the first Degree of *Aries*, and that Circle which passes through the Centre of any Star, shall be said to be the Longitude of that Star; and the more 'tis distant from the said point, the greater is its Longitude.

But **Longitude**, amongst Geographers, is, *An Arch of the Equator, comprehended between the first Meridian, and the Meridian of the Place you enquire after*; and shows how much one Place is more Eastern or Westernly than the other. For the greater a Places Longitude is, so much the more is it situate towards the East, and consequently the Sun Rises earlier, and comes to the Meridian sooner. Whence to compute the first or true Meridian, whether from the *Canaries*, or *Fortunate Islands*, according to *Ptolomy* and the Ancients; or the *Azores*, as most of the Moderns do, has been heretofore disputed; nor is it much material, if the World were but agreed upon it: We always in our Maps and Globes reckon it from the Isle *Gratiosa*, one of the *Azores*. By this the Greater or Lesser Distance of Places from each other may be found out, allowing for every Degree 60 Miles.

Lord of the Year, Is that Planet that has most Testi-

Testimonies of Fortitude in a Revolutional Figure.

Lord of the Geniture, Is that Planet that has greatest strength in the Figure of any Persons Nativity, called *Geniture*, from the Latin word *Gigno*, to beget) and so becomes principal Significator of his Temperament, Manners, Affections of his Body, *&c.* But what Planet this shall be, is controverted; for *Julius Firmicus*, a celebrated Author, that flourish'd about 320 years after Christ, would have it to be the Lord of that Sign into which the Moon enters next after the Birth, except only the Luminaries, as being universal Significators. But we must note this Author to be a better Latinist than Astrologer; and the sounder opinion is, To constitute that Planet of the Five, Lord, that being in fit Places, shall have most Dignities in the places of the Luminaries, the Ascendant, the Mid-Heaven, and part of Fortune.

Lord of the Hour, Is a Planet governing each 12*th.* part of the Day, and also of the Night, severally and respectively, divided into 12 parts, which therefore we call *Unequal*, (as being varied according to the Length of the Day) or *Planetary Hours*, beginning at Sun-rising, and the first Hour attributed to that Planet which that day is assigned to, as on *Sunday* to ☉, on *Munday* to ☾, and so counting downwards, as the Planets are situate, and beginning again, till all the 12 Hours are past, and then going on with the next Planet for the Night; but reckoning a greater or lesser space for the Nocturnal Hours, as the Night happens to be Longer or Shorter than the Day. Some Authors ascribe a great deal of vertue to these Horary Rulers; but the Judicious *Morine* seems to slight the observation of them.

Lucifer, [Lat. a Bringer of Light] *Venus* is called so, when she is Oriental, and Rises before the *Sun*; which the Greeks also term *Phosphorus*, and the Vulgar, *The Day-Star*: So when she sets after the Sun, she is called *Hesperus*, or the Evening-Star.

Luminaries, [Lat. Great Lights] The *Sun* and *Moon*, called so by way of Eminence, for their extraordinary Lustre, the one ruling the Day, the other the Night.

Luna, The Latin name for the *Moon*, the lowest or next to Earth of the seven Planets, Feminine, and Nocturnal: for that borrowing her Light from the *Sun*, she excels in passive Qualities and Moisture: And therefore as the *Sun* presides over the Heart, Spirits, and Blood, so the *Moon* over the Brain, Bowels, and Phlegm. She perfects her course in the Zodiack in the space of 27 days, 7 Hours, and 41 Minutes; but till she overtake the *Sun* again, is required 29 Days, 12 Hours, and 44 Minutes. Hence arises a three-fold Month, of *Peragration*, or Periodical, wherein she finishes her Revolution. 2ly. *Synodical*, the space of time between her parting from, and returning to the *Sun*. And 3ly. The Month of *Illumination*, that is, the space that she is visible to be seen, which is about 26 Days and 12 Hours. There have not been wanting some, both Ancient and Modern Philosophers, that have conceited the Body of the *Moon* to be Inhabitable; but this seems repugnant to Divinity. *Quæ supra nos, nihil ad nos.*

M

Machine, Is an Engine, or self-mover with Wheels and Springs, both in Clock-work, and for many other Uses, as well in *Mechanicks*, as *Mathematicks*.

Magazine, A Store-house for Arms or Provision, a word not much used amongst Mathematical Terms, and known to most People.

Magick, [From *Magos*, a Greek word, signifying an Interpreter of Divine Mysteries, properly the study of Natural Wisdom] A good and innocent Science, teaching the knowledge and mutual application of Actives to Passives, thereby performing many excellent and wonderful works. Such were the Three *Magi*, or Wise men that came out of the East to worship our *Saviour*. But afterwards the Study being depraved by the *Arabians*, and fill'd with many *Superstitious Vanities*, the word became to be taken in an *ill sense*, for *Conjuration*, or some such wicked Art, that by confederacy with, and the assistance of the Devil, does either truly do, or rather in a jugling deceitful way seem to perform some Miraculous Operations, or above the ordinary attainment of Humane Nature. In which *Pliny* represents *Zoroaster* as the first Grand Master.

Magnitude, [Lat. Greatness, or Bigness] Is the proper Subject of Geometry, about which 'tis busied; as Speech is of Grammar, or Reasoning of Logick.

Logick. 'Tis defined to be, *A Continued, or Continual Quantity.* As Number is said to be a *Discrete* (or Disjoyned) *Quantity*; for one, two, three, four, do consist of one, two, three or four Unities, which, are disjoyned and severed parts: whereas the parts of a Line, Surface, and Body, are contained and continued without distinction or separation.

Malefith, [Causing evil or mischief, a Latin word, from *Malus*, Evil, and *Facio*, to do] But is generally applied to *Saturn* or *Mars*, by reason of the ill effects attributed to them by Astrologers.

Mapp, [Lat. *Mappa*] a *Geographical*, and sometimes a *Chorographical* Discription of the Earth, or some particular parts of it, projected upon a plain Superficies, describing the form of Countreys, Rivers, Situation of Cities, Hills, Woods, and other Remarks.

Mars, [sometimes called *Mavors*, both Latin names for him] The third (in order descending) of the Planets, being in nature Hot and Dry, but excelling in Driness, finishing his Revolution in the space of almost two years. He (as all the rest of the Planets, except the *Moon*) has the Sun for his Centre, so that when he is Achronically opposite to him, he seems to be below him, nearer the Earth, and appears almost as big as *Venus*, having a greater Parallax than the *Sun*, *viz.* four Minutes, as has oft been observed: Hence, when he is in the lowest Absis of his Orb, we find a great Intension of Heat, if it be Summer, or Remission of Cold in Winter: And the contrary, when he is in his *Apogaon*, for the distance between them is said to be 16902800 miles, and therefore no wonder if he somewhat increase or abate his Effects on Earth,

as

as he is so much nearer to, or further from it. This Planet, by Astrologers, is called, The *Lesser Infortune*, an Enemy to Humane Nature, by reason of his scorching and over-drying Qualities. He signifies Military Men, Chyrurgions, Smiths, *&c.* and of Diseases, such as proceed from Adust Choler and heat of Blood, as acute Fevers, Yellow Jaundice, Small-Pox, and the like.

Marine, Any thing appertaining to the Sea, and from thence *Mariner*, a Sailer or Master of a Ship, who ought to be skilled in the *Mathematicks*.

Masculine { Planets or Signs. } This Term is used by Astrologers, not to denote any real distinction of *Sex* in the Celestial Bodies, but only Analogically serves to signifie the *Qualities* they are principally endued with: For if a Planet or Sign excel in Active Qualities, (that is, Heat, or Coldness) then 'tis said to be *Masculine*; but if its Passive Qualities (that is, Moisture, and Driness) exceed, then 'tis called *Feminine*. Of Planets, *Venus* and the *Moon* are counted *Feminine*, all the rest *Masculine*, except *Mercury*, who is a kind of an *Hermaphrodite*: Of Signs, *Aries*, *Gemini*, *Leo*, *Libra*, *Sagittary*, and *Aquary*, are *Masculine*; the other six *Feminine*.

Masts, They are well known to appertain to all *Ships*, without which, there can be no Sailing.

Mazzaroth, A *Chaldean* word, signifying the Zodiack; 'tis used, *Job* 38. 32. *Canst thou bring forth Mazzaroth in his season?* but seems there to intend some Constellation.

Mathematicks, The word *Mathesis* being originally Greek, signifies *Learning* or *Discipline*.

And

And the Ancients concluding only those Sciences which are founded upon *Certainty*, and proceed by *Demonstration* worthy of that name, called them, *Mathematicks*. They contain in general *Geometry*, *Arithmetick*, *Astronomy*, and *Musick*; but indeed comprehend many other most excellent and useful Branches of Learning; as, *Cosmography*, *Hydrography*, *Opticks*, *Astrology*, *Navigation*, *Architecture*, *&c.* Of the Necessity, Profit, Extent, Use, Dignity, and Excellency of all which see *John Dee's* most profound and incomparable Preface to *Euclid's Elements*.

Matutine, [a Latin word, of, or belonging to the Morning] Astronomers call the other six Planets so, when being Oriental from the Sun, they are above the Earth when he Rises, and Vespertine when they Set after him. Now the three Superior Planets are strongest, being Oriental and Matutine; but the three Inferiour, when they are Occidental and Vespertine. The reason is, because the first in the first Case, but the last in the second, do then descend to the lowest part of their Orbs, are increased in light, and approaching nearer the Earth; and so on the contrary, the Inferiors Matutine, the Superiors Vespertine, are weakned.

Mean Diameter. See *Oughtred's Gauging Rules*, *fol.* 5. *&c.* or any Book of Gauging: 'Tis a Geometrical Mean between the Diameters at Head and Bung in any close Cask.

Measure of Time, Is a matter much to be regarded in handling Nativities, that when you have a Direction, you may know how long it will be before it operates. For which purpose there are three opinions: First, *Ptolomy's*, to direct the Ascendant by Oblique Ascensions, the Mid-heaven

by

by Right Aſcenſions; and finding the Difference, allow for every Degree of the Equator one year. The ſecond of *Maginus*, (induced thereto, as he confeſſes, by our late mentioned Dr. *Dee* of *London*) which is, For the common Meaſure of one Years ſpace in the Directions of every Significator to take that Ark of the Equator agreeing to the apparent motion of the Sun at the time of Birth, according to his Right Aſcenſions, and not Oblique Aſcenſions of the Region. The laſt, and now generally approved and practiſed, is that of *Valentine Naibod* in his Comment upon *Ptolemy*, which is, to find the diſtance between the Signifi-cator and Promittor, as in the firſt way, and then reckon for one of thoſe degrees, one year five days and eight hours, and for every minute, ſix days and four hours; of which you have Tables in moſt *Genethlical* Authors.

Mechanicks, [From *Mechanè*, a Greek word, ſignifying *Endeavour*, *Contrivance*, or *Invention*.] Are thoſe Operations which are diſpatch'd as well by the labour of the Hands, as of the Brain. A Skill enabling a Workman without knowledge of Mathematical Demonſtrations, perfectly to work, and finiſh any ſenſible work by the Mathematician Demonſtrated, or Demonſtrable. Furthermore, as their Arts, ſo ſuch Workmen themſelves are often called **Mechanicks**: A word ignorantly uſed by the Vulgar, in contempt, whereas there are ſcarce any Faculties more *neceſſary* to Humane Life.

Medium Coeli, Latin; In Engliſh, **The Mid-heaven**, is the tenth Houſe, or Angle of the South in an Aſtrological Figure: In which, Planets and Stars have the greateſt Altitude that they can have,

have, and consequently dart Rays more direct and of greater Efficacy; it signifies Kings, Governors, Commanders, all sorts of Magistrates, a private man's Preferment. Profession, or Trade. *Jupiter* or the *Sun* found here, are very propitious; but *Saturn* or the *Dragons-Tail* in this House are said to deny such a Native Honour, and signify that he shall be but little esteemed in the World.

Mechanick Powers, or Mechanick Faculties are Six. 1. *Libra*, the Ballance. 2. *Vectis*, the Leaver. 3. *Axis* in *Peritrochio*, the Wheel. 4. *Trochea*, the Pully. 5. *Cuneus*, the Wedge. 6. *Cochlea*, the Screw unto some of which, the force of all Mechanical Inventions must necessarily be Reduced. See Bishop *Wilkins* his *Mathematical Magick*, *Archimedes*, or *Mechanical Powers*, Chap. 3.

Mercators Cart, or Projection; A Projection of the Face of the Earth in *Plano*, wherein the Degrees upon the Meridian increase towards the Poles, in the same proportion that the Parallel Circles decrease towards the Poles: called *Mercators Cart*, or sometimes Projection, because *Mercator* was the first that published Carts thus made; though our Countrey-man Mr. *Wright* was the first that made the Tables for this Projection. See *Wright's Correction of Errors*.

Mercury, The least of all the Planets, and lowest, except the *Moon*. Though some place him in the very Deferent of the *Sun*, and allow him not any proper Orb, but only an *Epicycle*, whereby sometimes he is placed above the *Sun*, and rendred invisible. 'Tis certain he is never above 28 degrees, or thereabouts, removed from the *Sun*, nor *Venus* above 48. And therefore neither of them both can never make any Aspect with the *Sun*, but

a Conjunction, which in truth is none. This Planet *Mercury* is of a dusky colour, but ſeldom ſeen, for the reaſon aforeſaid; his mean motion is 59 minutes, and 8 ſeconds; but ſometimes ſo ſwift, that he goes a whole degree and 40 minutes in a day. His Nature is various, and participates much with the Planet he is with, or beheld by; yet in his own nature he is cold and dry, a great ſtirrer up of Winds; and being ſtrong, ſignifies a good Wit, or ſubtil, politick Brain, ſtudious and docible; but when ill-dgnified, an hair-brain'd, troubleſome, prating fellow, a Liar, a Buffoon, *&c.* He generally denotes one of an high ſtature, (but if Oriental, more low,) an high fore-head, and ſomewhat narrow, long face, long noſe, his eyes but ſmall, and neither perfectly black, nor gray; thin lips and noſe, little hair on the chin, but much on his head, of a ſad brown, or enclining to blackneſs; long arms, fingers and hands, his whole Body ſlender, and little; nimble in his gate, and quick in all his motions; his complexion paliſh, or like an Olive or Cheſnut-colour: He ſignifies all Letter'd men, Philoſophers, Mathematicians, Merchants, Secretaries, Advocates, Ambaſſadors, and ſometimes, Thieves, Taylors, Carriers, Footmen, Solicitors, buſy Secretaries, and they unlearned, but talkative; Conceited School-maſters, *&c.*

Meridian, Is a Semi-Circle imagined in Heaven, that reaches from North to South, and paſſes through the *Zenith* of the Place we inhabit in, into both the Poles: It cuts the Equator at Right Angles; and its *Axis* is a Line paſſing by the Center of the Earth to the Heavens, and the ends thereof are called the Poles. 'Tis ſo called from the

Latin

Latin word *Meridies*, signifying Noon; becau[se] when the Sun, by the motion of the *Primum Mo[bile]*, is brought to the Meridian of any place at a[ny] times of the year, it there makes Noon; and therefore by the help thereof, is found the Quan[ti]ty of Day and Night; the *Semidiurnal* and *Se[mi]nocturnal* Arch of any Star, *&c.*

But you must know, that there are infinite Meri[di]ans in *Geography*; for all places lying East or West from one another, have different Meridians; so that a man moving directly North and South, keepeth the same Meridian; but going East or West, alters it. But the Meridians delineated up[on] on the Terrestrial Globe, are in Number 36; so that between two Meridians is contained 10 de[gr]ees of the Equator: From the first of these Me[ri]dians, (which is divided into twice 90 degrees) accounted from the Equator towards either Pole, is the beginning of Longitude; which upon our English Globes, is at the Ile *Gratiosa*, one of the Isles of the *Azores*, and numbred in the Equator Eastwards, with 10, 20, 30, *&c.* to 360 round about the Globe, till it end where it began. See *Tutor to Astronomy*, *pag.* 8.

Meridional, Southern, or towards the South. From the Lat. *Meridies*, the Noon-Point, which being always to us in the South, is likewise taken for it.

Meridian-Line, A Line of great use in *Navigation*, used in *Mercator's* Sailing; of which you may read the Use and Construction at large, in Mr. *Wright's Correction of Errors in Navigation*. Sold by *James Moxon*.

Metonick year, [So called from one *Meton*, an *Athenian* that invented it;] is the space of 19 years,

years, (and thence for the most part called, *The Great Metonick Year*. In which space of time the Lunations return, and happen as they were before.

Mesolabium, (as *Sinesius* calls it, or as Master *Oughtred* calls it, Mesolabium,) Gr. from *Meson*, and *Lumbano*, an Instrument for finding mean Proportions.

Meteors, Gr. Are imperfect mixtures of the Elements drawn up by the Sun and Stars, and there hapning into several Forms. As sometimes where the matter is extraordinary, into *Comets*, blazing Stars, strange Appearances in the Air, *Ignes fatui*, &c. but commonly into *Hail*, *Snow*, and *Heavy Frost*, which are soon resolved again into the form of their Elements.

Mid-Heaven. See Medium Cœli.

Mile. See the Postscript explaining and defining this and all other Measures used amongst us.

Milky-way, [Called in Greek *Galaxia*, in Latin *Via Lactea*, which are all of the same in sense, in the three several Languages.] Is the only real Circle in Heaven; for in a clear night 'tis always conspicuous like a Swadling-band infolding the Constellations of *Cassiopea*, the Eagle, part of *Sagittary*, the Tail of *Scorpio*, the *Centaur*, the Ship *Argo*, the feet of *Gemini* and *Perseus*, &c. It appears with a kind of whiteness like *Milk*, but the cause thereof was much disputed, till our modern *Telescopes* convinc'd us, that 'tis only a heap of Stars, which by reason of their smalness, and distance from the Earth, cannot be distinctly discern'd, and yet altogether make that part more bright than the rest of the Firmament. The Poets Fable that 'taws mady by *Ganimedes* spilling a large Bowl of Nectar, and that it was the Gallery

through which the Gods went to Council with *Jupiter*. See *Ovid 1 Met. Est via sublimis, &c.*

Minute, In Latin *Minutum*, from *Minus*, less, Is the sixtieth part of a whole Degree, or Hour: So that every hour or degree of the Equator or Zodiack is divided into 60 Minutes, every Minute into 60 Seconds, each Second into 60 Thirds, and so to 10ths, or further, if you think you can carry your Conception so far.

Moon. See *Luna*.

Moveable Feasts, Are those Festivals which, though they are celebrated on the same day of the week, have no fix'd seat in the Calendar, but in several years happen on several days of the month; of which kind, besides *Easter* and *Whitsuntide*, &c. are all the Lords days in the year, whereof many being called by particular strange names in our Common Almanacks, I shall here take leave to explain them in order; Since, if all the Almanack-makers themselves can well understand the reason thereof, I am sure not one in a thousand of their Readers understand it.

To begin then with the year: If there be any Sunday between the Circumcision of our Lord, called *New-years-day*, and *Twelfth-day*, called *Epiphany*, [from the appearance of the Star to the Wise men,] such Sunday has no name assigned. The Sundays following *Epiphany*, are noted in order; as the 1st, the 2d, &c. after *Epiphany*; and they are sometimes more, and sometimes fewer: As *Easter* falls high, or low; for they must be ended, and give place to *Septuagesima*, which is always the 10th Sunday inclusively before *Easter*, and thence is so called, as being *Seventy* days before it: So the next Sunday is called *Sexagesima*, and

the

the next after that *Quinquagesima*, called also *Dominica Bacchanaliorum*; (the Sunday of Revellers or Bacchanalians;) because then, and in the week following, many Christians shew themselves as mad as the Drunken Worshippers of *Bacchus* amongst the Heathen. 'Tis also called *Esto mihi*, because then the *Introitus* was out of *Psalm* 30. *ver.* 3. beginning *Esto mihi*, The Wednesday in this week is *Dies Cinerum*, or *Ashwednesday*, being the beginning of Lent, on which they were wont to besprinkle their heads with *Ashes*. The next Sunday is *Quadragesima*, or the first Sunday in Lent, called also *Invocavit*, because then is sung that of the Psalmist, *Invocavit me, & ego exaudiam eum, He called upon me, and I will hear him.* The second Sunday in Lent is called *Reminiscere*, for the same reason, taken from *Psalm* the 25th *v.* 6. *Remember, O Lord, thy tender mercies, &c.* The third, *Oculi*, from the 15th *ver.* of the same *Psalm*, *Oculi mei semper ad Dominum, Mine eyes are ever towards the Lord.* The fourth, *Lætare*, from that *Isa.* 66. 10. *Lætare cum* Jerusalem, *Rejoyce thou with* Jerusalem: Some call it *Dominica de Rosa*, because then the Pope holds a Golden Rose in his hand at Church before all the People; and others *Dominica de panibus*, because the miracle of the five Loaves in the Gospel is explained: This day with us is generally term'd *Mid-Lent* Sunday. The 5th Sunday in *Lent* is called *Judica*, from *Psal.* 43. *ver.* 1. *Judge me, O God, and plead my cause.* The next is *Palm-Sunday*; so called from the Palm-branches which the people strew'd before our Saviour entring *Jerusalem*: 'Tis likewise called *Dominica Magna*, for the *Great* and ineffable Good wrought in the week following for the faithful;

for the Friday next is *Good-Friday*, as the day whereon our Blessed Saviour suffered for the sins of mankind. Then comes *Easter-Sunday*, celebrated in memory of our Saviour's Resurrection, which is the Foundation and Rule for all the moveable Feasts. After this follows the *Quinquagesima*, or space of 50 days between *Easter* and *Whitsuntide*. All which the Ancient Christians kept as a Festival, containing 6 Sundays; The first *Quasimodo Geniti*, from that of 1 *Pet.* 2. 2. *As new-born Babes, &c.* 'Tis also called *Dominica in Albis*, because those that were baptized at *Easter* used to go in *White* Garments all the week, which the day at night they left off. The second Sunday is called *Misericordia*, from *Psalm* 32. 5. The third, *Jubilate*, from *Psalm* 65. 1. The fourth, *Cantate*, from *Psalm* 97. 1. The fifth, *Vocem Jucunditatis*, from the *Introit* that day beginning so; 'tis also called *Rogation-Sunday*, and the whole Week following, *Rogation-week*, because then they made their Processions into the Fields, said the Litany, and made their Prayers and Requests [*Rogations*] to God publickly. The Thursday in this week is *Holy Thursday*, kept in memory of our Saviour's Ascension into Heaven. The last is called *Exaudi*, from that of *Psalm* 27. 7. *Hear, O Lord, my voice.* Then succeeds the Grand Feast, called by us *Whitsuntide*, (because people appeared in such colour'd Garments anciently,) but in Greek *Pentecost*. Which, as it was observed by the Jews in memory of the Promulgation of the Law at *Mount Sinai*, just 50 days after their Pass-over, so Christians observe it the seventh Sunday after *Easter*, (called still *Pascha*,) by reason that then the Holy Ghost was sent, and the Gift of Tongues conferr'd upon the

the Apostles. The next is *Trinity Sunday*, and from thence the Sundays are reckon'd in order; as first, second, third, &c. after *Trinity*, to the first Sunday in *Advent*. Which time of *Advent* [or *Coming*] being a Kind of Preparation for the Grand Festival of our Lord's Birth, contains the four Sundays next before *Christmas*; and are reckon'd by number, as first, second, &c. Sunday in *Advent*. And thus much of Moveable Feasts, which may seem a Digression, but not to be condemn'd by them that perhaps had never heard so much, if they had not met it here.

Moveable Signs, Are the same that are named **Cardinal**, *viz. Aries*, *Cancer*, *Libra*, and *Capricorn*; so called, because they are Arguments of the Motions of Times; as from which, the mutations of the Seasons are made in Spring, Summer, Autumn, and Winter; one passing to the other according to the Predominancy of the four first Qualities; so *Aries* and *Libra* bring in the Spring and Autumn, *Cancer* and *Capricorn* Summer and Winter, each of them excelling in suitable Qualities. And as these Signs are the beginning of Mutation in Celestials, so in these Inferiors they cause Mutability, and are tokens of Mutations, as on the contrary, Fixed Signs are of Stability.

Multiplex, Manifold, from *Multus*, many, and *Plico*, to fold.

Multangled Figure, or a Figure of many Sides and Angles.

Multilateral, [Many Sided.] All Figures that have more than four Right Lines, are so called by *Euclid El.* 1. From the Latin, *Multus*, many; and *Latus*, a Side.

Multiplication, Is a common Rule in *Arithmetick*,

tick, ſerving inſtead of a manifold Addition. In it there are two Numbers given, one to be multiplied (which is the greater) called the *Multiplicand*; the other that by which it is to be multiplied, called the *Multiplicator*; and a third Number to be found, called the *Product*, which as often ſhall contain the firſt Number, as there are Unites in the ſecond.

Muſick, Gr. Is one of the ſeven Liberal Sciences, and a fourth Branch in the general Diviſion of the Mathematicks, having for its Object *Diſcreet Quantity* or *Number*, but conſiders it not abſolutely like Arithmetick, but with proportion of *Time* and *Sound*, and in order to making a delightful *Harmony*; ſo that indeed Muſick is nothing elſe but the Agreement, apt Proportion and Mixture of *Acute*, *Grave*, and *Mixt* Sounds.

Mute [or Dumb] Signs, are thoſe which are denominated from Creatures that have no voice, as *Cancer*, *Scorpio*, and *Piſces*; and in Nativities, when the Significators are therein, do ſpoyl, or cauſe ſome Impediment in the Native's Speech.

Mutilated, [Lat. *Lame*, or *Deficient*:] Otherwiſe called *Azimene Degrees*; are certain degrees in ſeveral Signs: As from the 6th, to the 10th of *Taurus*; from the 9th, to the 15th of *Cancer*; the 18. 27 and 28 of *Leo*; the 18 and 19 of *Scorpio*; the 1. 7. 8. 18 and 19 of *Sagittary*; the 26. 27 28 and 29 of *Capricorn*; and the 18 and 19 of *Aquary*, that threaten the Native that has them Aſcending, or the Moon Lord of the Aſcendant, or of the Figure, in them, with lameneſs, deafneſs, halting, or ſome Inſeparable defect in ſome eminent Member. And amongſt the Fixed Stars, *Caput Medusæ*, if mixed with the Significators by Di-

rection or otherwise, is said generally to threaten Beheading, or loss of Limbs.

N

NAdir, Is an *Arabick* word, and signifies that Point of Heaven under the Earth, which is Diametrically opposite to the Point directly over our Head, which in the same Language is called the *Zenith*; so that they both are as it were Poles of the Horizon, and distant from it on each Side 90 degrees, and consequently fall upon the Meridian, one above, the other under the Earth; and look what distance one of them has from the Equator, and one of the Poles of the World; the same on the contrary has the other to the opposite Pole, and adverse part of the Equator.

Napers Bones. Nautical Compass. Nautical Cart. } These are Instruments, the first for Multiplication, Division and Extraction of Roots with much ease, the other for Navigation, and frequently sold at most Instrument-makers Shops.

Natural { Day, and Year, } The space of 24 hours, or Revolution of the *Primum Mobile*; one Revolution of the Sun by his proper motion, or 365 days and almost 6 hours.

Nativity, In an Astrological sense, is the true time of any person's Birth, *viz.* when he first begins to breath in the World, and thereby in a peculiar

cular manner becomes liable to the Celestial Influences; but is appropriated rather to the Scheme or Figure of the Heavens carefully Erected for that moment of time. The word is from the Latin, *Nascor*, to be born, or rather its participle, *Natus sum*.

Navigation, Is an Art that demonstrateth how by the best way, aptest direction, and shortest time, a sufficient Ship, between any two places (in passage Navigable, assigned) may be conducted, and in all storms and disturbances hapning, how to use the best possible means to recover the place first Assigned.

Nebulous [Cloudy] Stars, Are certain Fixed Stars of a dull, pale, and obscurish Light. So called either because they look Cloudily, or rather because they generate Clouds; and fetting with the Sun, render the Air troubled, and duskish: As also they are found by Experience, being joyn'd with the *Luminaries* to afflict a Native with blindness or dimness. There are also in every Sign certain degrees called Dark, and others Sunary, which have the like effect in altering the Complexions, and impairing or obscuring their Understandings; whose principal Significators happen to be Posited therein. Of which, and several other Divisions of the Signs, see a necessary Table, in that useful *Enchiridion* for all Artists, Entituled, *A Tweer to Astrology*, p. 64.

Needle. See *Box and Needle*.

Nequenum, A Greek word used by some Authors; that signifies only the *New Moon*, or Change.

New Moon. See Novilunium.

Nocturnal, [From the Lat. *Nox*, the Night.]

Of or belonging to the Night. Signs or Planets are ſaid to be ſo, in which Paſſive Qualities, as Moiſture and Driness, excel. See *Diurnal*. Alſo the name of an Inſtrument uſed for the obſervation of the Stars, &c.

Nodes, [A Latin word ſignifying properly Knots, twiſtings or twinings one over another; but] by Aſtronomers uſed to ſignify the Interſections of the Orbit [tract or courſe] of the Sun, commonly called the Ecliptick; and the Orbits of the other Planets that have Latitude: So that the Point where a Planet paſſes over the Ecliptick out of Southern Latitude into Northern, is called its North-*Node*. And where it deſcends from North to South, its South-*Node*, which change their places in the *Zodiack* like the Planets, but contrary to the ſucceſſion of the Signs; yet thoſe of the three Superior Planets move inſenſibly; thoſe the of three Inferiors faſter; but thoſe of the Moon are only or chiefly taken notice of, commonly called the *Dragon-Head* and *Tail*. Which ſee before.

Nonageſimus Gradus, or the 90th Degree; of uſe in the Computation of Eclipſes and other matters in *Aſtronomy*.

Nona Sphæra, [Lat. The Ninth Sphere;] Is uſually termed *Primum Mobile*, it is the Firſt Mover, being above the 8th Sphere or Starry Heaven, and carrying with it all the Inferior Sphere with a moſt ſwift motion from Eaſt to Weſt, finiſhing its Revolution in 24 hours.

Noviluniom, From the Lat. *Novus*, New; and *Luna*, the Moon. The Latin word for all that time before and after the Moons Conjunction with the Sun, (or Change) wherein ſhe is not viſible.

But

But to find the exact moment of the Conjunction, some Authors prescribe a pleasant sensible Experiment, *viz.* Take a Glass or Silver Vessel, filled with Lye or fair Water, into which some time before, put the Ashes of an Olive-tree or Vine, which will rest quiet in the bottom; but as soon as the Moon enters the Diameter of the Sun, will rise, trouble the Water, and be hurried round, not resting till she is perfectly past the Body of the Sun. This my Author affirms he hath often tried.

Nones. See before in *Calends*.

Northern Signs, The first six Signs are called so, because they decline from the Equinoctial Northward.

Number, Is commonly defined to be, *A Collection of Units*, or *Multitude composed of Units*; but that *One* cannot be properly termed a *Number*, but the beginning of *Number*: Yet I confess this (though generally received) to some seems questionable, for against it thus one might argue: A part is of the same matter of which is its Whole: An Unit is part of a multitude of Units; Therefore an Unit is of the same matter with a multitude of Units: But the matter and substance of Units is Number; Therefore the matter of an Unit is Number. Or thus, A Number being given, If from the same we substract 0, (no number) the Number given doth remain: Let 3 be the Number given, and from the same be taken 1, or an Unit, (which, as these will say, is no Number) then the Number given doth remain, that is to say, 3, which to say, is absurd. But this by the by, and with submission to better Judgments.

Dr. *Wallis* in his *Arithmetick*, says, That a Point in *Geometry* is equal to (0) in *Arithmetick*,

for

for a Point is *Indivisible*, and so is a Nul or Cypher: And farther, that Unity is the Least Number, *viz.* (1,) A Null is Number, a Null (or Cypher) is the beginning of Number in the same sense as a Point is of Magnitude (or Line, *&c.*) in which sense Unity is deny'd to be Number, *Euclid B. 7. Def.* 1. 2.

Numeration, [Lat. *Numbring*] the first of the five Vulgar Rules of Arithmetick, teaching to read truly any Sum or Number, or write it down aptly when 'tis propos'd.

Numerator, Is the upper Figure in a Fraction; so called, because it Numbers how many parts are to be taken out of those into which the Whole is divided: And the under Figure is called *Denominator*, because it shews how the parts taken are to be denominated, whether Seconds, Thirds, *&c.* As ¼ One Fourth part, One is Numerator, Four Denominator.

There are many other Terms in the *Mathematicks* appertaining to *Number*, as *Square Numbers*, *Cubick Numbers*, &c. Also *Surd*, *Deaf*, *Irrational* or *Incommensurable* Numbers, &c. Also Rational and Commensurable, Geometrical, Harmonical, Polygonial, and Pyramidal, and divers others, Explained in their proper places, and therefore needs no more words in this place.

O

OBeying Signs, The Southern, or last six Signs of the Zodiack are so called.

Oblique, Crooked, bending, or winding towards one side. The word *Oblique* signifying crooked, warpt, or bending.

Oblique Ascension. See *Ascension*.

Oblique Sphere. See *Sphere*.

Oblike Angle. See *Angle*.

Oblique Signs. See *Signs*.

Oblong, A long Square, or figure in *Geometry* of four Sides, and Rectangled, but not Equilateral, or not having all the Sides equal to one another, though its opposite Sides be.

Obtuse, Blunt, or Broad.

Obtuse Angle. See *Angle*.

Occidens, } *Occidens* is Latin for the *West*,
and } because the Sun or Stars do seem
Occidental, } *dere*, fall down, or Set there.
'Tis properly therefore that part of the Horizon where the Equator, or a Star therein, descends into the lower Hemisphere. But 'tis improperly, yet frequently taken for all that Arch of the Horizon, which defines the Occidual Amplitude of the Stars. Hence in Astronomy, the *7th.* House from the Horoscope is called, *The Angle of the West*. In *Geography*, the West was anciently reckon'd from the *Fortunate Islands*, but now is generally counted from the *Azores*.

Occulta-

Occultation, A Term in *Astronomy*, shewing a Star or *Planet* is hid from our Sight.

Occidental, } A Planet is said to be *Occidental*,
Oriental, } when it sets after the Sun; but *Oriental*, when it rises in the morning before him. See *Matutine*.

Octahedron, [From *Octo* Eight, and *Hedron*, a Side] is a Solid Figure, contained under eight Triangles, Equal, and Equilateral. *Euclid. Elem.* 11.

Olympiads, The space of four years, whereby the Antient *Greeks* reckoned their Memorable Occurrences; they took their Original from those famous Games celebrated every 5th year in *Elis*, and came into use about 500 years after the destruction of *Troy*: And in the year of the World 3228. Before the Institution of those *Olympiads*, the *Greek* History is generally fabulous.

Opposition, [From the Lat. *Oppono* to oppose, thwart, or contradict] Is, when two Planets, being distant 180 Degrees, behold one another diametrically opposite; and therefore is Counted an Aspect of the greatest Enmity. Yet between the Benevolents (especially of the same Nature) it becomes good, as some Artists are of opinion.

Optiks, [so called from a Greek word signifying *Seeing*, and from the Lat. *Perspective*] An Art Mathematical which demonstrates the manner and properties of all Radiations, Direct, Broken, and Reflected. See a Book entituled, *Practical Perspective*.

Orb, [A Latine word, signifying properly any round thing, and so 'tis often taken for the World; but in an Astronomical sense] It is taken for the Deferent of each Planet, which is vulgarly called its *Sphere*: Yet in truth, an *Orb* differs from a *Sphere*;

Sphere; for *this* properly signifies a Globe, contained under *one onely* Superficies; and solid even to the Centre; but an *Orb* is a Spherical Body, limited with *two Superficies*; one outward, which is *Convex*, (or bulging forth) the other inward which is a *Concave*, (or hollow, vaulted over like an Oven.) And therefore look how many Heavens, so many Orbs there are, the Higher encompassing the Lower; and how much the Concave Superficies of the uppermost is, so much also is the Convex of the Nethermost, much like the several Peels and Coats of an Onion. But because every Orb or Heaven contains within it self like unto other Orbs; as for example, the Orb of the Sun contains three other several Orbs, of which, two are Excentrick after a certain sort, and the third simply so. Therefore for avoiding confusion of words, use has obtain'd, that now the Heavens themselves should not be called *Orbs*, but *Spheres*; and thus the greatest Sphere is the *Primum Mobile*, next the Sphere of the Fixed Stars, after that of *Saturn*, then of *Jupiter*, &c. to that of the *Moon*, the lowest and least of all, as well in circuit as thickness, the compass of her Concave being 758250 miles; the thickness, that is, the space contained between her Concave and Convex 109056 miles; the compass of her Convex, which is the same with the Concave of *Mercury*, as aforesaid 1443750 miles.

The thickness of *Mercuries* Orb 370480; the compass of his Convex Superficies 3772500 miles.

The thickness of the Orb of *Venus* 34137[illegible] the Circuit of her *Convex* 25230375 miles.

The thickness of the Deferent of the *Sun* 3391[illegible]

339102; the compass of its outward *Convex* Superficies 27361875 miles.

The thickness of the Orb of *Mars* 27339375; the compass of its *Convex* 199209375 miles.

The thickness of the Orb of *Jupiter* is extended unto 19775497; the compass of its *Convex* 323512500 miles.

The thickness of the Orb of *Saturn* is 89474374; the compass of his *Convex*, and consequently of the *Concave Superficies* of the Firmament or Heaven, in which the Fixed Stars are placed, 50878125o miles.

The compass of that Firmament 80241471; and the compass of its *Convex* 1017562500 miles; which last sum is the circuit of the *Concave* of the *Primum Mobile*; but its thickness, or the measure of its *Convex*, is by no means to be found out: yet rationally by comparison we may judge it so vast, that even the Starry Orb may not be much more comparable to it, than our Earthly Globe to the Firmament. Well then, from this Immense Fabrick may we with the Psalmist cry out, *The Heavens declare the glory of God*, and shew forth the Workmanship of an Almighty and Adorable Architect. They that would be satisfi'd further on this Subject, let them read *Clavius* on the Sphere of *Sacrobosco*, *cap.* 1. and rather most of our Later and most Refin'd Astronomers, that have within this last half Century of Years, very much improv'd Astronomy by Observations.

Orbit, [Lat.] Is properly the Tract left by a Wheel in the Road; hence Astronomers use the word to signifie the way or course of the Sun, (peculiarly called the *Ecliptick*) as also of any other Planet moving on according to the Circle

of

of its Latitude; nor is this without reason, for the transient Planet leaves behind him I know not what impression or footsteps of his Virtue and Quality, as Snails and other insects leave marks of their tabifick quality in the path they pass over.

Ordinate Figure, *&c.* See *Ramus*, 37, 39.

Orient, [from the Lat. *Orior*, to arise] The East point properly where the Sun Rises, when he is in the Equinoctial points *Aries* and *Libra*, but serves for all that part of the Horizontal Circle in which the Sun, at any time in the year rises to us. Hence comes the word *Oriental*, of or belonging to the East, or pertaining to Rising. See *Directions*.

Oriental, Opposite to *Occidental*. A Planet is said to be *Oriental* of the Sun, when he Rises before him, and *Occidental*, when he Rises after him, as you may see in all Books of the Introductory part of *Astrology*.

Orthogon, [from the Greek *Orthos*, Right, and *Gonia*, an Angle] A Right Angle, or a Geometrical Figure which consists of Right Angles, and has an Equality of all its parts.

Orthographie, [from *Orthos*, True or Right, and *Graphe*, to write; so that] The true *English* of this word being of *Greek* defcent, is true or right Writing, and so is used by Grammarians. But in the Mathematicks, and particularly in Architecture, 'tis taken for the Model, Plaforing and description of the Front and Signels a House that one is going to build, contrived according to the Rules of Geometry; according to which Idea or Pattern, the whole Fabrick is erected and finished. 'Tis a Term also frequent in Perspective; and

therein

therein, the Orthography of any Body or Building, is the fore-right side of any Plain, that is, the side or plain that lies parallel to a straight Line, that may be imagined to pass through the outward convex points of your two Eyes, continued to a convenient length: So that the Office of Orthography is, to delineate the fore-right Plain.

Oval Figure, [From the Lat. *Ovum*, an Egg] Geometricians call that so which resembles an Egg, round, but Oblong, so that Lines drawn from its outmost Superficies to the Centre, are not equal, and yet answer well enough to each other from the opposite sides: It differs from an *Illipsis*, because that is plain and circumscribed by one only Line, whereas this is solid, included every where with a Superficies, as a Globe is; only the Globe is exactly round, which this is not.

Otatoustaton, An Ear-pipe, to augment Hearing.

Oxygon, or Oxygonium, [from the Greek *Oxys*, acute, or sharp, and *Gonia*, an Angle] is a Geometrical Triangular Figure, having necessarily all its three Angles acute; in which it differs from an *Amblygon*, that must have but two acute, and the third obtuse. Therefore every *Oxygonal Triangle* may be either Equilateral, which necessarily will not be a Right Angle, and consist of three Acute Angles; or an *Isosceles*, *viz.* if it have two equal Sides, and those greater than the Third; or a *Scalenum*, which hath all its Sides unequal. Whereas an *Amblygon* can only be an *Isosceles*, or a *Scalenum*, but not Equilateral; since a Figure which has altogether equal Sides, can in no wise terminate in an Obtuse Angle.

P

PAnsilene, A Greek word used by some Authors for the Full Moon; from *Pan*, All, or the Whole, and *Selene*, the Moon.

Parabola, (or according to some, Parabole) [a Greek word signifying a Plant] Is a Figure in Geometry, or Area, circumscribed by two Lines, one Right, and the other Crooked; The Right Line being an *Axis* for the Crooked to move about upon, of which, the great *Archimedes* wrote much, and first of all, with many Arguments and Demonstrations attempted to Square it, and that not without success. See this Figure in most Books of Solid Geometry.

Parallax, A Greek word, signifying a Change or Variation, but used in Astronomy for the Deviation or Error of the Sight, occasion'd by the distance of the Term of the visual Line, projected from the Superficies of the Earth to a Star, or other *Phænomenon* in Heaven, from the Term of another Line projected from the Centre of the Earth to the Body of the same Star; in the place where he truly is: For when we behold the Stars from the Earths Superficies, which is almost 3035 miles from its Centre, it must needs follow, that the place designed, by a Right Line from the Centre of the Earth, would be different from what we now make, so that the Star would seem to be quite otherwise situate. This variation or diversity

sity of Aspect is called the *Parallax*, which is greater or lesser, according to the greater or lesser neatness that the Star has to the Earth. Besides, it has place, in a Ray obliquely cast, or when a Star, not being Vertical, projects his Beams, as it were, on one side, and so to the Centre and Superficies of the Earth: For when 'tis Vertical, casting its Beams directly to the Superficies, it must needs pass by the Centre which is just under, and so suffer no Parallax: Therefore the further they are from the Zenith, and nearer the Horizon, so much the greater is their Parallax; which on the contrary is proportionably decreased, as they more and more approach the Vertix. See the Demonstration hereof in all Books of *Astronomy*, as *Wing*, *Street*, and all our late English Writers; easy enough to be had, and which I presume, few Students but have them in their Studies.

Comets and new Appearances in the Airy Region suffer the greatest Parallax, next the *Moon*, and other Planets, to whom the Earth carries some sensible proportionate bulk: but higher, as in the Sphere of the Fixed Stars, to which the whole Earth is but as a Point, there is no Parallax; nor is it sensible in *Saturn*, or *Jupiter*; but *Mars*, in Perigeon, has a Parallax of 4 Minutes; in Apogeon, scarce any at all; *Sol* generally 3 Minutes, *Venus* and *Mercury* very little; but the *Moon* when near the Horizon, almost a whole Degree; and always appears lower than indeed she is. By help of this Parallax, we know the distance of the Planets between themselves, and from the Earth, the time of their true Conjunction, and especially come to distinguish the true moment of Eclipses from the apparent.

Parallels, A Greek word, ſignifying things that are equal to each other mutually, when compared together, and ſo are Circles and Lines equidiſtant from each other, which though infinitely extended, can never touch. But more uſually the word is taken for Circles of a like diſtance from the Equator; and this as well conſidered on the Superficies of the Earth, as in the Heavens; for thoſe that are in the ſame diſtance from the Equator towards the ſame Pole, are ſaid to be in the ſame Parallel. Now as there are infinite Meridians, ſo there are infinite Parallels; and as the Meridian Lines on the Globe are drawn only through every 10th Degree of the Equator, ſo are the Parallels but to each 10th. Deg. of the Meridian. Theſe Parallel Circles run Eaſt and Weſt about the Globe, even as the Equator; only the Equator is a great Circle, and theſe are every one leſs than other, diminiſhing gradually till they end in the Pole.

Parallel Sphere, hath one Pole of the World in the Zenith, the other in the Nadir, and the Equinoctial line in the Horizon; ſo called, becauſe the Sun, Moon, or Star, in a Diurnal Revolution of the Heavens, neither aſcend higher, nor deſcend lower, but always move parallel to the Horizon. The Earth is thus poſited under the Poles, and there a whole year makes, as it were, one day, *viz.* ſix months Light, and ſix Darkneſs. See *Sphere*.

Parallelogram, Is a Quadrilateral (or four-ſided) Figure, whoſe two oppoſite Sides are parallel, or equi-diſtant; from the word *Parallel* and *Gramma*, a Letter or Figure. It is alſo the name of an Inſtrument, whereby two Copies of a thing may be writ or drawn at once.

Paral-

Parallelopleura, Are imperfect Parallelograms; and Irregular Correſpondencies of the Angles or Sides whereby they are conſtituted; for they are a ſort of Trapeziums, as having unequal Angles or Sides, but not all ſo; for they keep at leaſt ſomewhere a certain regularity and proportion of Parallels, whence they do not extend ſo largely as Trapeziums which include every kind of Figure in any manner Irregular, yet like them they may be Multiplied and Diverſifyed almoſt Infinitely. Whereof ſee *Clavius* on *Euclid.*

Parallelopipedon, Greek, Is a ſolid Figure conſiſting of 6 plane and equal Sides, of which every one is equal, and Parallel to that which is oppoſite to it. So that every *Parallelopipedon* may be called a *Priſm*, but not every *Priſm* a *Parallelopipedon*, as by the Definition of a *Priſm* will appear. See *Priſm.*

Parelia, [Mock-Suns] are Reflections of the Solar Beams in hallow watriſh Clouds, which like a Glaſs they receive, and ſo lively repreſent his Image that there appears as it were another Sun, and make it difficult to a vulgar Eye to diſtinguiſh which is the real, and which the fictitious one; for ſometimes the Reflection is ſingle, only on one ſide, ſometimes double on either ſide, and the true Sun in the midſt. Their natural ſignification is to denote approaching Rain.

Paraſelene, [A Mock-Moon] the ſame kind of Reſemblance of the Moon, as *Parelion* is of the Sun, and occaſion'd by the ſame means, but not ſo frequently; both words are part Latin part Greek, the firſt from *Par* (equal or like to) and *Elios* or *Helios* (the Sun) The ſecond from the ſame Latin

word *Par*, and the Greek word *Selene* signifying the *Moon*.

Part of Fortune, Is said to be the Lunar Horoscope, or place in the Scituation of the World, from whence the *Moon* takes her progress at that moment that the *Sun* Emerges from the Line of the East; And therefore if you take it upon a *New Moon*, 'twill fall in the Ascendant, If upon a *Full Moon*, in the 7th House, *&c.* The usual way of taking or finding it is thus:

1. Take the Sign, Degree, and Minute of the *Moons* place.
2. The Sign, Degree, and Minute of the *Suns* place; Substract the Latter from the Former, adding 12. Signs to the *Moons* place if it cannot be done otherwise;

What remains add to the Sign and Degree of the Ascendant, and if both make above 12 Signs, cast away 12. and what Signs, Degrees, and Minutes remain, (Reckoning here as in the whole Work from the beginning of *Aries*) Let your part of Fortune be there. 'Tis called part of Fortune, because most Astrologers do regard it in Judgments of a Natives Fortune, Estate or Riches: And according as 'tis well or ill affected, pronounce concerning the same; Its Character is thus ⊕; but being only an Imaginary Point can cast no Ray or Aspect. There are likewise other parts, as *Part of Life*, *Part of Death*, *Part of the Wife*, &c. Invented by the *Arabians*, but being generally exploded as vain, I omit them.

Partile Aspect, Is not as some may fancy by the sound of the word partly or almost an Aspect, or an Aspect in *Part*; But the most exact and full

Aspect

Aſpect that may be ſo called, becauſe it conſiſts *preciſely* of ſo many *parts* or degrees as are requiſite to Compleat ſuch an Aſpect even to a Degree; As *Mars* in 24 Degrees of *Aries*, and *Venus* in juſt the 24th of *Libra*, this is a Partile Oppoſition, The *Sun* in one Degree of *Taurus* and the *Moon* in one Degree of *Cancer* make a Partile Sextile; And it is a more ſtrong Sign or Argument in Judgments for performance of the thing, or that the matter is near hand Concluded, when the Aſpect is ſo *Partile*, and ſignifies Good, than when 'tis *Platick*, but it's as much a Sign of preſent Evil when Miſchief is threatned, whereas the *Platick* Aſpect ſhews ſomething paſt or to come, rather than now preſent or ſuddenly imminent. See Platick.

Part Proportional, A part or number agreeable and Analogous to ſome other part or Number; Or Medium to find out ſome part or Number unknown by proportion and equality of Reaſon. See *Quantity*, and enough of this in every Book of *Arithmetick*, and Books of the *Mathematicks*, *e. g.* If 60' give 40', 30' muſt needs give 20' by the Golden Rule, or part proportional.

Pentagon, [Gr. from *Pente* five, and *Gonia* an Angle] Is a Geometrical Figure having five Angles, whether they be Equilateral (of equal ſides) or not; If it be Equilateral, it is called a regular *Iſoperimeter*, which in the Heavens makes that New Aſpect called a *Quintile*, but if it have unequal ſides, then it is called abſolutely Irregular, and may like *Trapezia's*, many ways be varied.

Pentangle, The ſame, only a Greek and Latin word joyned, having five Angles.

Perly, See the Appendix of Meaſures.

Peregrine, [A Latine word that proprly signifies a Stranger, one out of his own Country where he has no Home, nor Authority] It is a Term attributed by Astrologers to a Planet that is found in a place of Heaven, where he has none of his five Essential Dignities, *viz. House, Exaltation, Triplicity, Term,* or *Face*; So *Saturn* in the 10th of *Aries* is *Peregrine*, but in the 27th Degree cannot be said to be so, because there he is in his own *Terms*: Or if there be a mutual Reception of two Planets by *House* or *Exaltation*, as the *Sun* in *Virgo*, *Mercury* in *Leo*, then neither of them shall be said to be *Peregrine*; In other Cases where a Planet is so, it is Counted an Essential weakning, and the like being in his Detriment reckon'd five Debilities.

Perigæon. See *Apogæon*,

Perihelion, [Gr. from *Peri* about, and *Helios* the *Sun*,] That point of a Planets Orb wherein he is neareſt to the *Sun*.

Perimeter, A Greek word, the same with *Circumferentia* in Latin, or That which incloses any Figure; as the *Perimeter* of a Triangle is a Line made of 3 Lines; of a Circle, a Periphery, of a Cube a Surface compounded of six Surfaces, of a Sphere, or whole Spherical Surface, *&c.*

Perioeci, [Gr. from *Peri* about and *Oiki* Habitations] The *Perioeci* of any place is in the same Latitude, but is distant in the Longitude 180 Degrees, *viz.* half the Circumference of the Earth in that Parallel. Thus the *Perioeci* of *England* is about 20 Degrees to the Eastwards of *Cathaio*; In the *Perioeci* of any place there happens not that Contrariety of Seasons in the year, that doth in the *Antipodes*, nor in the Length of Days: for the

Days

Days in both Places are of equal Length, but in the Times of the Day there is the same Contrariety: for though their Spring be our Spring, and the rest of the Seasons of the year the same with ours; yet their Morning is our Evening, and their Night is our Day. See Antœci.

Periphery, A Greek word signifying That Circular Line which goes about and infolds the whole Area or Content of a Circular Figure: The proportion of which to its Diameter is as 22 to Seven: the word is likewise sometimes taken for the whole Superficies of the Earth, or for the Convex and outermost part of any Celestial Sphere.

Periscii, [from the Greek *Peri*, about, and *scia*, a shadow] People that live within the compass of the *Artick* and *Antartick Circles*; so called, because the shadow is various, and runs round about them.

Perpendiculum, and **Perpendicular**, [From the Latin, *Perpendo*, to hang down] A Perpendicular, or Plumb-line, is an Instrument well known to Mathematicians, and most Mechanicks, used for the finding out whether any Pillar, Wall, &c. stand upright. Hence Geometricians call that a Perpendicular, which is let fall from above into a certain Bottom, with the same streightness as the Plummet hangs in a Perpendiculum. Astronomers also are wont to say, those Stars that are Vertical (or right over our heads) are Perpendicular, because their Beams fall so upon us. A.B. in the Figure 3. is a Perpendicular.

Perspective, [from the Latin *Perspicio*, to look at, or through] A Faculty, which according to Geometrical Precepts, by the visual Rays, Speculates

culates and Measures, all visible Bodies and Colours, &c. and is three-fold; One strictly called *Perspective*, which renders a reason of those Appearances, which offer themselves to our sight otherwise than the things really are, by reason of their different situation and distance. The second is conversant about several Refractions, which it for the most part considers in or from *Looking-Glasses*, 'tis thence called *Ars Speoularia*. The third is employ'd about *Shadows*, and shows how those things that in Painting appear confused and disorderly, by the diversity of site or placing, may appear agreable, and in order; and so on the contrary: And this is called *Sciatoptrica*. Of all which, see *Kercher*'s elaborate Treatise, entituled, *Ars magna Lucis & Umbræ*. See also *Practical Perspective*.

Phases, A Greek word, signifying Appearances, or the manner of things showing themselves, and therefore used for the several postures in which the Planets (especially the *Moon*) offer themselves to our sight, as obscure, horned, half illuminated, or full of light; which by the Telescope, may likewise be observed in *Venus* and *Mars*.

Phœnomena, [from the Greek *Phainomi*, to shew or appear] Appearances, or strange Sights; often used for Comets, or new Stars, whether in the Elementary or Ætherial Region.

Phænon, *Saturn* is sometimes called so, from his Nature, the word signifying *bloody*, *sad*, and *cruel*.

Phosphorus, The Usher or Harbinger of Day; *Venus* is so called in Greek, when she is our Morning Star. Also a Substance Chimically prepared, that shines and gives light in the dark.

Pilasters, A Term in Architecture, signifying Square Pillars, that usually stand behind Columns to bear Arches, *&c.*

Pisces, [Lat. the Fishes] The twelfth and last Sign of the Zodiack in the Southern Semicircle, but bordering on *Aries*, and therefore common, watterish, cold, and moist. The House of *Jupiter*, and Exaltation of *Venus*.

Planets, The word is originally Greek, and signifies as much as *Wanderers*; whence we call them Erratick Stars, *viz.* Stars not placed in the Firmament, as the Fixed, but in Orbs of their own, and by their proper motions wandring in the Zodiack, contrary to the motion of the *Primum Mobile*, from West to East, according to the succession of the Signs. They are in number Seven, (not to speak of those lately discovered about *Jupiter* and *Saturn*) viz. *Saturn*, *Jupiter*, *Mars*, *Sol*, *Venus*, *Mercury*, and the *Moon*. These all differ from the rest of the Stars, not only in Motion, as aforesaid, but also in Light, being to be known from the other, in that they never Twinkle, which the Fixed always do.

Planisphere, [from *Planus*, Plain, and *Sphera*, a Sphere] A Sphere described *in Plano*, or a plain or flat Projection of the Sphere; *viz.* all the Lines and Circles thereof: And thus the Maps either of Heaven or Earth are called Planispheres: And so are all other Astrolabical Instruments.

Plain, Amongst Geometricians, is a flat Superficies; that is, a Superficies that lies equal between its Lines, whereby 'tis opposed to a Spherical Body, and a Circle, which are circumscribed with a crooked Line, or Superficies. Hence that vulgar Axiom, *That a Spherical Body touches not a Plain but in one Point.*

Plano-

Planetary Hour. See *Lord of the Hour.*

Plain Chart, A Plat or Chart that Sea-men Sail by, whose Degrees of Longitude and Latitude are made of the same length. Thus in

Plain Sailing, Sea-men by their Account of Sailing East, West, North, South, or any other Point of the Compass, and of the Distance the Ship has Run upon the Plain Chart.

Plain Scale, A thin Ruler of about a Foot in length, whereon is graduated the Line of Chords, Leagues, Rumbs, *&c.* By which little Instrument Sea-men are much help'd to keep an Account of the way the Ship has made.

Planimetry, The Art of Measuring Plains and Superficies.

Platick Aspect, Is a Term to distinguish it from *Partile. Platus* in Greek signifies *wide,* or *broad*; so this Aspect takes more room than the other which is confined to the same Degree, whereas this is a Ray cast, not exactly from one Planet to to the Body of another Planet, but only within the Orb of his Light. To know when this Aspect happens, you must know the quantity of this Planets Orb; and add them together, and take one half thereof, and if your Planets be within so many Degrees of a Partile Aspect, then they are in Platick Aspect one with another; the quantity allowed to each Planet for its Orb, before or after any Aspect, is as follows.

	d	m		d	m
Saturn	10	00	*Sol*	17	09
Jupiter	12	00	*Venus*	08	00
Mars	07	30	*Mercury*	07	00

	d	m
The *Moon*	12	30

Now ſuppoſe *Venus* in the 10*th.* Degree of *Taurus*, and *Saturn* in 18 Degrees of *Virgo*; here ſhe is in Platick Trine with him, becauſe ſhe is within the moiety of both their Orbs; for the moiety of *Saturns* Rays or Orb is 5 *deg.* and of *Venus* 4. and the diſtance between them and their perfect Aſpect is but 8 *deg.*

Thus alſo the Fixed Stars have an Orb of Activity on either ſide; thoſe of the firſt Magnitude 7 *Deg.* 30 *min.* of the ſecond Magnitude 5 *deg.* 30 *min.* of the Third 3 *deg.* 40 *min.* of the Fourth 1 *deg.* 30 *min.* And note, that this Platick Aſpect is caſt either on this ſide, or beyond the Body of the Planet; the firſt is called *Application*, for in that caſe, the Planet aſpecting applies and diſpoſes himſelf to have familiarity, and come to a Partile Aſpect with the other. The ſecond is named *Separation*, for then it has been in Partile Aſpect, and now by motion is parting away, but yet not got out of the bounds of its Orbs; which is chiefly regarded in the *Moon*: and the neareſt this is to a Partile Aſpect, ſo much the more efficacious it is; and better generally is an Application, than the Separation or Deflux. See Partile Aſpect.

Plinth, A Term in *Architecture*, appertaining to one of the 5 Orders. See *Vignolia*.

Plumb-Line. See Perpendiculum.

A Point, [in Latin *Punctum*] Is the ſmalleſt part of Quantity, or that Extream which can be divided into no further parts. The ſame (in a manner) in Quantity, as a *Unit* in Number, an *Inſtant* in Time, or a *Sound* in Muſick. To apprehend its Nature and Uſe, let us imagine an exceeding ſmall Tittle, Prick, or Point made on a Paper

a Paper with the nib of a Pen, which if again it ſhall be drawn out further, it will make a *Line*, having Length indeed, but not Breadth or Depth, and terminated at the two Ends with Points. Next, let us ſuppoſe the ſame Character indiviſible, and produced longwiſe or broadwiſe; two or more parallel Lines touching each other ſide by ſide, will make a *Superficies*; and then, if at laſt it be produced as well to be deep and broad, which it will be, if ſeveral Superficies be conceived one upon another, then have we a *ſolid Body*, capable of all dimenſion. And thus are exhibited all the three kinds of Quantity, according to the three-fold Dimenſion about which all the labour and ſpeculations of Geometry are employ'd.

Poles, [from πολέω, a Greek word, that ſignifies to run about] are properly the two Extremities of an Axis about which any thing movable is turn'd: And becauſe in the Heavens there is ſuch a regular and never ceaſing Circular Motion, and many Moveables, of which, each goes by its proper Orbit, therefore the Poles are very much to be minded in our Conſiderations of the Heavens, and as many Orbits as there are, ſo many double Poles are to be conceived. Thus the Poles of the *Horizon* are the *Zenith* and *Nadir*; the Poles of the *Meridian*, the two Points of the Riſing and Setting of the Equator in the Horizon; the Poles of the *Equinoctial Colure*, are the two Solſtitial Points *Cancer* and *Capricorn*; the Poles of the *Solſtitial Colure*, the two Equinoctial Points *Aries* and *Libra*; the Poles of the *Equator*, and Circles thereunto Parallel, are the two Poles of the World; and laſtly, of the *Zodiack* and *Ecliptick*, the Poles of the Zodiack, which deſcribe two

leſſer

leſſer Circles, *Artick* and *Antartick*, diſtant 23 Degrees and a half from the Poles of the World. Yet the Word *Poles* abſolutely taken, and without addition, is uſually meant the Poles of the World, becauſe only they continue immovable, and all the Spheres hurried by the motion of the *Primum Mobile*, are once in 24 hours wheel'd round about them. Or, 2ly. the Poles of the Zodiack, about which are turn'd all the ſecond Movables, as the Starry Heaven, or Orbs of the Planets, from Weſt to Eaſt, in appointed Periods.

But ſince theſe Poles are only Points conceived in the Heavens, therefore that the Artick Pole of the World may be known, we muſt imagine a Right Line from the Pole-Star to another next it in the Tail of the Little Bear; on which Line, make an Equilateral Triangle towards the Head of the Great Bear, at the top of which Triangle is the *true place* of the Pole. But this labour will be ſaved in the next Age, for then the Pole-Star, that has 88 D. g. Declination, will have 90, and ſo fall directly on the Pole.

Pole or Perch, A Meaſure. See the *Appendix*.

Polar Circles, The Artick and Antarctick are ſo called. See *Arctos*.

Polar Draught, A Repreſentation of the Earth, or of the Heavens, projected upon the Poles of the Equator. In Polar Draughts, all the Meridian-Lines are Equi-diſtant from each other in every Parallel, but the Circles repreſenting the Parallels are not Equi-diſtant from one another.

Poles of a Dial. All Dials, though upright, or Inclining, or Reclining, are yet Horizontal Dials, in ſome part of the Earth, and the Zenith and Nadir

Nadir of that Horizon are the Poles of that Dial. But how to find where these Poles will fall, see *Tut. to Astron. & Greg. Book* 5. *Prob.* 14.

Polyedron, Polygon, and Polygram, } A Geometrical Figure consisting of many } Plain Faces, Angles, Lines.

Edron being Greek for a Basis, Face, or Side; *Gonia* for an Angle, and *Gramma* for a Line.

Ponderous, [Lat. heavy or slow] Those Planets are said to be so that move leisurely and slowly, like a man under a burden; as *Saturn*, *Jupiter*, and *Mars*, who never by their Diurnal Motion can reach one whole Degree.

Position, A putting, placing, or representing of things; as the respect of a Planet, in an Astrological Figure, to other Planets and parts of the Figure, is called his *Position*.

Postventional, Coming, or that is to come after. They are words seldom used but in reference to the Lunations, (Change or Full of the Moon) next before or after any great Conjunction of the Superiors, Appearance of a Comet, Revolution of the World, or other Figure; from consideration of which foregoing or following Lunation, the Artist is assisted in his Judgment.

Preventional, [from the Latin *Prævenio*] Coming, or that hath come, Before.

Primary Planets, Are the the 3 Superior Planets, ♄, ♃ and ♂.

The Prime of the Moon, An old word for signifying the New *Moon* at her first appearing, or about three days after the Change, at which time she is said to be Primed.

Prime Figure, Is that which cannot be divided into

into any other Figures more simple than it self: as a Triangle in Plains, the Piramis in Solids; for all Plains are made of the first, all Bodies or Solids compounded of the Second.

Prime, or First Number, Is defined by *Euclid* to be that which only Unity doth measure, as 2, 3, 5, 7, 11, 13, 17, 19, 33, 29, 31, &c. for only Unity can measure these.

Powers, Numerical, Geometrical, Mathematical, and otherwise called Integer, Mixt, Quadratick, Biquadratick, *&c.* Cube, *&c.* See (in part) *Rathborn*, fol. 15.

Primum Mobile, [Lat: the First Mover] Is the the Tenth Sphere, which includes the Firmamament; or Heaven of Fixed Stars, and all the Spheres of the Planets, and hurries them round from East to West once in 24 hours, on the Poles of the World. And this Heaven is known only by its Motion; for there be in it no Stars, no Images, nor Characters, (as some have vainly and superstitiously fancied) for even the Signs and Circles which we imagine to be therein, are only fictitious. Yea, some of the Learned (amongst whom is the Noble *Tycho* himself) are of opinion, that there is no such distinct Sphere, *Anastron*, (or without Stars) and only serving for Motion: For they conceive probably, that the Diurnal Conversion of the World, is not caused by any such separate *Primum Mobile*, but from the nature of the whole Celestial Region; that is, that the whole Æther is moved on the Poles of the World by its proper vertue, conferred on it by God, from East to West; in which, in the mean time, all the Stars and Planets are carried, by their proper Motions, from West to

East, on the Poles of the Zodiack; which are therefore called *Secunda Mobilia*, to distinguish them from the other.

Prisme, [In Greek *Prisma* signifies a sawing or cutting, but used in Geometry for] A solid Figure, contained of Plains, two of which (those that are opposite to one another) are equal alike, and parallel; but the others are Parallelograms.

Problem, Gr. It is opposed to Theorem, and such a Proposition as is referred to Practice: It is a Proposition, which requireth some action or doing, as the making of some Figure, or to divide a Figure or Line, to apply Figure to Figure, to add Figures together, or to substract one from another, &c. As the first Proposition of *Euclid*'s first Book is a Problem, *viz. Upon a given terminated Right Line, to make an Equilateral Triangle*; which, after the Demonstrations is concluded after this manner, *Therefore*, &c. *which was to be done.*

Profiles, Is a Term in Fortification. See *Orthography*: 'Tis also called *Section*, 'tis an *Italian* word, and is that Design which shews the Side with the Rising or Falling of any Work, as a place drawn Side-ways, that is so, as only one Side or Moiety of the Bulwark may be seen: Or 'tis a Perpendicular or Upright Draught of any Fortification, as it doth Represent it self to the View, being Finished, shewing the Breadths, Heights, Depths and Lengths of the Rampart Parallel Ditch or Covert way. See the late Book of *Fortification*, published by Mr. *R. Morden*, for all Terms in that Art.

Profections, [from *Proficiscor*, to pass, or go forwards] are equal and regular Progressions of the

the *Sun*, and other Significators, through the Signs of the Zodiack, according to the Successions of the Signs, allowing to each Profection the whole Circle, and one Sign over: As if the *Sun*, in the first year, be in 24 Degrees of *Aries*, next year he shall be in 24 Degrees of *Taurus*. Besides these Annual Profections, there are others Monthly and Annual. But being devices not much regarded by Modern Artists, I shall not here trouble the Reader further about them.

Prohibition, [Lat. a forbidding or hinderance,] is, when two Planets, that signifie the effecting, or bringing to conclusion any thing demanded, or applying to an Aspect, and before they can come to a true Aspect, another Planet interposeth either his Body or Aspect, so that thereby the matter is hindered and retarded.

Projection of the Sphere, is a describing the Lines and Circles of the Sphere, or so many of them as the purpose requires, upon a flat surface. Thus Maps, Astrolabes, Sun-Dials, Quadrants, *&c.* are all Projections of the Sphere.

Promittors, or **Promittors**, [Lat. from *Promitto*, to promise or engage, to bring somewhat to pass] A Term used in the Genethliacal part of Astrology, treating of Directions; so called, because they promise in the Radix something to be accomplish'd, when the time of the Direction is fulfilled; and are only the Planets, or their Aspects, or in some cases Fixed Stars, to whom their Significators, that is, the Horoscope, Mid-Heaven, *Sun*, *Moon*, and *Part of Fortune*, are directed.

Proper Motion, Is the Motion of a particular Planet from West to East, in contradistinction of

its enforced Diurnal Motion from East to West, caused by the *Primum Mobile*.

Proportion, [called in Greek *Analogy*, and sometimes after the Latines, *Proportionalitas*] *Is a similitude or likeness of two or more Reasons between themselves.* This is the Basis on which the whole Structure of Geometry is founded, and the scope to which all its Precepts tend. But because the Quantity is two-fold, Continu'd and Disjoyn'd, hence arises a *Two-fold Proportion, Geometrical*, and *Arithmetical*; the first is regarded in *Continued Quantity*, the second in *Numbers*, comparing one with another, and thereby coming to the knowledge of others before unknown; yet both are performed by Numbers, and retaining each his own name, extends it self to consider the others Quantity, according to the divers reason of Proportions, and habitude of one thing to another, applying afterwards to Continued Quantity what was made out by *Quantity Discrete*: And on the contrary, feigning in Numbers all the Passions of Continued Quantity, that what in one is conspicuous, may be made appear so in the other, by the same reason of Habitude. Thus in *Quantity Discrete*, 'tis as easie as in *Continued*, to assign a Whole and Parts, Indivisible Points, which are Units, composing the same Discreet Quantity, Numbers, Plain, Solid, Square, and all other sorts of Figures. The *Arithmetical Proportion* therefore is, when three or more Numbers proceed with the same difference, as 4, 7, 10, 13, 16, *&c.* each Number exceeding that which goes before by the Number Three. But the *Geometrical Proportion* is, when three or more Numbers have the same Reason, as 2, 6, 18, 54, 162,

152, &c. where every Number bears the same Proportion to that which precedes, or *Triple Reason*, containing three times as much.

Of Proportions, whether in Continued or Discrete Quantities, some are *Rational*, others *Irrational*: The Rational is that which two *Commensurable Quantities* have between themselves. The Irrational that which two *Incommensurables* have. Now those Quantities are said to be *Commensurable*, which have one *Aliquot part*, or which one common Measure can mete; as are Lines of 20 and of 8 Inches, whereof the Aliquot part is a Line of 4 or 2 Inches. But Incommensurable Quantities have no Aliquot parts; that is, there is no common Measure given that may measure them; as is the Diameter of a Square, and the Side of the same Square: For though each of those Lines have infinite Aliquot parts, as the Half, the Third, *&c.* yet 'tis not an Aliquot part common to both, that is, not any Aliquot part of the one, be it never so little, can possibly measure the other. There are divers other Considerables about Proportions, for which, see *Euclid*, *Elem.* 5.

Proposition, [from the Lat. *Propano*, to propound, or shew forth] Amongst Geometricians is a Sentence set forth to be proved by Reasoning and Demonstrations, and therefore is again repeated in the end of the Demonstration.

Prorogator of Leke, The same with *Hylech*, which see.

Prostapheresis, [A Greek word, signifying as much as filling up, or Adequation] Is that part of the Ecliptick which is to be added or substracted from the *Mean* Motion of the Planets to ob-

tain the True, or from their *True* to obtain their Mean Motion.

Pseudostella, [Greek, a false Star] Any kind of Comet or Phænomenon newly appearing in the Heavens like a Star.

Pyramid, [so called from the Greek word *Pyr*, signifying Fire, because a flame ends Taper in a Point like this Figure] so a solid Figure contained under diverse Plains, which meet or Terminate, at one and the same point being drawn from another Plain which is for the Base of the Pyramid; and here note that every Body whether Opacous or Luminous transmits its shadow or Light after a Pyramidal Form. Only the Luminous Body casts it so, that the Vertex (Top) of the Pyramid form'd is in that point of the Luminous Body from whence the Light proceeds, and the Basis on the Superficies of the Body Inlightned, but an Opacous Body casts its shadow contrarywise, the Basis of the Pyramid by it made, being in the Superficies of the body making the shadow, and the *Vertex* in a point of any body to which the shadow is extended.

Pyroïs, [Greek Fiery] A Greek name for *Mars*, from his fiery Nature, colour and brightness so called.

Q

Quadrant, [from the Lat. Quatuor, Four] Is the 4th part of a whole Circle, or 90 Degrees, and from thence the Name of an Inſtrument, which amongſt all Mathematical ones may juſtly Claim the Preeminence, for by its help almoſt all the operations of Geometry, Aſtronomy, and other Mathematical Sciences are both affected, and eaſily apprehended; but eſpecially the Elevation of the Pole, and height of the Sun or other Stars above the Horizon; Their Declination, Diſtance from each other, Place in the Zodiack, *&c.*

Quadrant of Altitude, Is the part of the Furniture of an Artificial Globe, being a thin *Braſs* Plate divided into 90 Degrees, and marked upwards with 10, 20, *&c.* being Rivetted to a Braſs Nut which is fitted to the Meridian, and hath a ſcrew in it, to ſcerw upon any Degree of the Meridian; when it is uſed it is moſt commonly ſcrewed to the Zenith. Its uſe is for Meaſuring the Altitudes, finding Amplitudes, and Azimuths, and deſcribing Almicantarahs. See *Tutor to Aſtronomy, pag.* 6.

Quadrat. See Square.

Quadrangle, A Geometrical Figure conſiſting of four Angles, as a Parallelogram, Rhombus, Rhomboides, *&c.*

Quadrature of the Circle, See *Squaring of the Circle.*

Quadrilateral, having 4 Sides.

Quadrupedial, [From the Lat. *Quatuor* 4, and *Pes* a Foot, four-footed] Signs, See *Beastial.*

Quadruple, Fourfold.

Quarters of Heaven, The four Principal, East, West, North, and South; but in Astronomy they are Intersections of the Sphere considered as well in the World as in the Zodiack, of which two are Oriental and counted Masculine, reckoned from the Rising of the *Sun* to his place at high Noon, and from the West to the *Imum Cœli* in the World, and from the beginning of *Aries* to the beginning of *Cancer*, and from the beginning of *Libra* to the end of *Sagittary*, and the other two just the contrary.

Quantity, Is the proper and largest object of Geometrical Arts, not as 'tis an accident adhering to matter, and endued with sensible qualities; (For so the consideration of it belongs to Philosophers) but as it is an Extension of parts, and a certain apt measure both to measure other quantities, and be measured again by them. See Point.

Quantity discrete, &c. See *Proportion.*

Querent, [From the Lat. *Quæro* to seek] An Enquirer, the person that demands a Question of an Astrologer generally signified by the Ascendent its Lord, and Planets therein, and the *Moon.* Hence

Quesited, The party or thing Enquired after, or concerning, whose Significator is varied according to his Relation to the Question, or nature of the business belonging to such or such an House; As if a Question be askt about a Brother, the third House and its Lord shall signifie him; If a Child, the 5th, *&c.*

Quin-

Quinque-Angled, That has 5 Angles, from the Lat. *Quinque*, Five.

Quintuple, Five-fold.

Quintile, One of the New Aſpects invented by *Kepler*, thus marked, ⚺. It happens when Planets are diſtant a 5th part of the Zodiack or 72 Degrees, and in its Nature is good and favourable.

Quintunx, Another of thoſe New Aſpects, when Planets are diſtant 5 Signs or 150 Degrees.

Quotient, A term in Arithmetick derived from the Latine word *Quoties*, *how often*; becauſe it ſhows how often a ſmall Number in Diviſion is contained in a greater, as 4 is the Quotient of Twenty divided by 5.

R

RAdius, Lat. properly a Ray or beam of the *Sun*, but in the Opticks 'tis defined to be a Luminous ſtraight Line, or *an Illumination made by a right Line*, and yet that is but one ſort of them, for there are two others; A *Reflex Ray*, which is tranſmitted from the body illuminated either back to the Luminous body, or ſideway on ſome other Object; and a *Refracted Ray*, which is when the Medium is too thick, and ſo it glances into a thinner, or too thin, and ſo it chooſes one more thick, as when from the Air 'tis diffuſed upon the Water. In Aſtronomy, a *Radius* or a Ray is taken for the Aſpect or Configuration of two Stars: ſo we ſay

Saturn

Saturn beholds *Venus* with an *Hoſtile Ray*, &c. when he is ſquare with him; but amongſt Geometricians by Radius is meant, the greateſt *Sine*, which is the *Semidiameter* of a Circle, and the half *Chords* ſubtended under the whole Circle, after which follow other Leſſer Circles always Leſs and Leſs even to the Complement of the Arch under which they are ſubtended; by which (by the help of the Rule of Proportions) we find out the Quantity of the other *Sines*, and the Arch by which each is ſubtended, as alſo of the Tangent and Secant: In Scheme 1. A B is Radius to that Circle. See further Radix.

Radix, [In Lat. a Root] by ſimilitude taken from the root of a Tree; from whence all the body and Branches proceed: It is uſed by Artiſts for beginning of things, or the foundation whence is drawn the reaſon of Computing the Celeſtial Motions, relating to ſuch a perſon or thing, ſo the Nativity or Figure erected for the time of any perſons birth, is called *The Radix* in reſpect of *Revolutions*, *Directions*, *Progreſſions*, &c.

Rational, A Rational Figure or Number, *Body—Geom. (Ram. 38.)*

Ravlin or Half-Moon, A Term uſed much in Fortification now in our Age, eſpecially by the *French*.

Rational way of Erecting a Figure, Is a way of Diſtributing the ſpaces of the Houſes; Invented firſt by *Abraham Avenſra*, and ſince highly aſſerted by *Regiomontanus*, who for the Excellency of it in his apprehenſion called it the *Rational way*, as eſteeming the method preſcribed by *Ptolomy* and others of the Ancients abſurd and fantaſtick. Now the Diviſion they propoſe, is to divide

divide the Equator (as *Ptolomy* and his followers did the Zodiack) into twelve equal parts by 6 great Circles drawn through mutual Sections of the Horizon and Meridian, *&c.* Being the way now commonly Practised by All Astrologers in Erecting their Figures.

Rampart, A Bulwork, 'tis a Term common in Fortification, and demonstrated by all Authors of that Subject. See a late piece thereof, published by Mr. *Mordant*: Or that of Sir *Jonas Moor*, &c.

Reason, This word is used by Mathematicians in a peculiar Sence, and is thus Defined by *Euclid El.* 5. *Reason is an Habit of two Magnitudes of the same kind compared the one to the other, according to Quantity*: whereby it appears, that when two Quantities of the same kind, as two Numbers, two Lines, two Superficies, two Solids, *&c.* are Compared to one another according to Quantity; that is to say, according as one is greater or less than the other, or equal thereto, such Comparison is called *Reason*, or (as others will have it) *Proportion*; *Reason* and *Rational* in this Sence is variously divided, as *Reason*, *Rational*, and *Irrational*, *Reason of equality* and *inequality*, *Reason Multiplex*, *Reason Multiplex Superparticular*, &c. For all which see *Euclid* in the 5th *El.* aforesaid, where they are all explained: and no pretender to Mathematicks being to be supposed to be without that most Necessary Author, I think it not necessary here to transcribe them.

Reception, [Lat. a Receiving or Entertaining from *Recepio*] Is a kind of accidental Dignity or Fortitude happening to two Planets (especially if they are agreeable in nature, and friendly) when they are found in each others Houses, Exaltation,

or

or other eſſential Dignities, as ☉ in ♈ and ♂ in ♌. Or ☉ in ♉ and ☿ in ♈. The firſt is a Reception by Houſe, (which is the beſt and ſtrongeſt) The ſecond is a Reception by Triplicity, if if the Queſtion or Nativity be by day.

Reflexion, Lat. Is a Redoubling of the Action or quality ſent from ſome Agent upon the Patient, whereby the ſame Action or quality produced in the Patient, is intended, and Acted over, endeavouring to tend back again to the firſt Agent. So Light darted from the *Sun* upon a Looking-glaſs is intended (or made more ſtrong) and turn'd back encreaſed through the ſame Medium that it came; 'Tis to this Reflection of the Solar Beams that Heaven owes thoſe thouſands of Beauties which every clear night we admire: for the Stars are ſuppoſed to have no Light of their own, but what they receive this way from the *Sun*.

Refraction, [Lat. a breaking back or again] The word is uſed in Aſtronomy and Perſpective, to ſignify that diverſity of Aſpect, and Error of the Sight, which happens in our contemplating the Stars, or beholding any other bodies at a great diſtance, either by Optick Inſtruments, or any interpoſed Diaphonous body, when thereby the Rays or Species of the Viſible object are broken, and repreſent the things otherwiſe than in truth they are; as is manifeſt in Looking-glaſſes, which according to their greater Denſity or rarity notably alter the Object; the general Cauſe of Refractions are the obliquity of the Sight, and the thickneſs of the Air, which the thicker it is the greater will be the Refraction, hence Stars near the Horizon are moſt obnoxious to it, whereas in the Meridian the Air is more clear and free from

vapours,

vapours, ſo that there they ſuffer little or no Refraction; the knowledge hereof is of good uſe in Eclipſes to find out the *true* time of Incidence, Greatneſs and Duration from the *Apparent*.

Regiment, or Rule, or Government, A Regiment of Souldiers is the Proper Command of a *Colonel*; If it be of Horſe, it commonly conſiſts of 5, 6, 7, or 8 Troops: If it be Foot, it uſually hath 8, 9, 10, 11, or 12 Companies.

Region. Our Hemiſphere, or the four Cardinal points of the Heavens, or of the Air, or either, *&c.*

Refraination, [from the Latine Particle *Re*, and *Frænum* a Bridle, a holding back as with a Bridle] 'Tis a kind of weakning to a Planet, which is called ſo by Aſtrologers when a Planet going to an Aſpect with another, before they come up to it becomes *Retrograde*, and thereby is as it were pluckt back, as *Saturn* in 12 Degrees of ♈ *Mars* in 7 Degrees, here ♂ haſtens to a Conjunction of *Saturn*, but before he comes to the 10th or 11th Degree of ♈, he becomes *Retrograde*, and by that means refrains to come to a ☌ of ♄, who ſtill moves forward in the Sign. Nothing ſignified by the former Conjunction will be Effected.

To Rectify a Nativity, Is to bring the Eſtimate and ſuppoſed time to the true and real time of a perſons Birth. For which there are ſeveral ways, as the *Animodar* of *Ptolomy*, the *Trutine* of *Hermes*, and by *Accidents*, which laſt as the moſt certain is generally followed.

Reclining, [Latine, to lean backwards] A Term uſed in Dyalling for a Plane, that leans from you when you ſtand before it. See *Mechanick Dyalling*.

Rectangle,

Rectangle, A Right Angle. See Angle.

Regular Figures, Are such as are Equilateral, and of equal Angles, as are all *Isoperimeters*, and and yet these words not Synonimous, *Isoperimetral* Figures are understood to be those which contain equal Circuits; But Regular Figures are those where the Angles and Lines or Superficies are equal: On the contrary, those called Irregular, which have not the Equality of Sides and Angles, as are *Prisms* and *Trapezia*'s; and to know these, Describe a Line about any Figure from its Centre at its Angles, if the Circumference equally touch all the Angles, the Figure is Regular, otherwise Irregular.

Residual Figure, The Remaining Figure after Subtraction of a less from a greater.

Requisites, As in particular, in the Art of Dialling. See *Wells* or *Gunter*'s Dialling.

Reptile, A Term in Navigation, also in Musick.

Retrograde, [Lat. moving or going backwards] A Planet is said to be so by Astronomers, when by his proper Motion in the Zodiack he moves contrary to the Succession of the Signs; as if he go from the second degree of *Aries* to the first, and so into the 30th degree of *Pisces*, which is by all accounted the greatest Debility that can happen to a Planet, as to be swift in Motion is a very great Fortitude; the reason whereof seems to be this, that when a Planet is swift, he strives more against the Motion of the *Primum Mobile*, and staying longer above the Earth has more time to diffuse his Light and Influence on Inferiors, whereas he that is Retrograde is so far from resisting, that he Anticipates the Motion of the *Primum Mobile*,

Mobile, and finiſhes his Revolution in leſs than 24 hours, ſo has not time to affect inferiors ſo powerfully with his Qualities, and conſequently muſt be accounted *weak*; and this (by the way) may be one reaſon why the Planets have more power over us than the Fixed Stars.

To Retrogradation all Planets, except the *Luminaries*, are ſubject; not that really they move backward, but becauſe they are carried every one in his Epicycle, which has the *Sun* for his Centre: and ſo whilſt the Orbs are carried about with the rapid motion under the *Primum Mobile*, their Bodies, in reſpect of us, ſeem ſometimes to move backwards, ſometimes to ſtand ſtill, and ſometimes move ſwifter and ſlower, though in truth they always go on equally and in the ſame manner in their Epicycle. But when they are in their firſt ſtation, deſcending from their *Apogæon* to their *Perigæon*, they appear Retrograde, as you may ſenſibly behold in a Sphere.

Retrenchment, A Term in Fortification, and 'tis underſtood both in General and Particular.

Retroceſſion, A Retracting or going back.

Revolution, [Lat. a turning round, or rolling about] Is the Circulation of any Sphere or Star, till it return to the ſame point in which it was when firſt it began to move. Thus *Saturn* finiſhes his Revolution in the Zodiack in the ſpace of almoſt thirty years, *Jupiter* in twelve, *Mars* in two, the *Sun* in one year, the *Moon* in one month, and the *Primum Mobile* in the ſpace of one natural day, that is, 24 hours. But ſometimes, eſpecially among Aſtrologers, the word is more ſtrictly taken for the return of the *Sun* preciſely to the ſame point of the Zodiack that he was in at the begin-

beginning of a thing. Thus the Figure of his entring *Aries* is called the *Revolution of the World*. So in the Doctrine of *Nativities*, a *Revolution* is the annual return of the *Sun* to that very point wherein he was at the Radix, or time of Birth. And the Figures erected at these moments of time, are called Revolutional Figures.

Rhabdology, [from the Greek *Roabdos*, a Rod] A way of counting and measuring by Rods; called *Napiers Bones*.

Rhombus, Is a Geometrical Figure, having four Sides, and those equal, but the Angles unequal, two opposite ones being Acute, the other two Obtuse. So called from the Greek word *Rhombos*, which signifies the Fish called the *Turbot*, and the Quarrels of Glass in a Window.

Rhomboides, Is of the same derivation; being just of such a shape or form, a Figur of four Sides, having not only its Angles, but Sides too unequal; yet so, that two as well Sides as Angles opposite to each other are equal: And is a Figure between a *Rhombus* and a *Parallelogram*; from the one it takes proportion of Angles, from the other correspondence of Sides: And therefore for its likeness to a *Rhombus*, is called *Rhomboides*.

Rhumbs, Are neither Circles, nor Streight Lines, but *Helispherical* or Spiral Lines; but in Plain Cards, and *Mercator*'s Cards, they are represented by Streight Lines: They proceed from the point where we stand, and wind about the Globe of the Earth, till they come to the Pole, where at last they lose themselves. They represent the Thirty two Winds of the Mariners Compass. Their use to shew the Bearing of any two Places one from another: that is to say, upon what

what Point of the Compass any Shoar or Land lies from another. They were first called *Rhumbs* by the *Portugals*, and that name since continued by all Authors, (as well Latine as others) that have occasion to speak of them.

Right Angle. See *Angle*.

Right { Ascension. / Descension. } See Ascension.

Right Ascension of Time. See *Lilly* 490. or it is 15 Degrees of the Æquator that passes through the Meridian every Hour of Time, as may be seen by the Globe, and 'tis usually put in the first great Column of all Tables of Houses for Setting of Cœlestial Schemes, answering to every Degree of the *Sun's* place in the *Ecliptick* upon the *Mid-Heaven*, or *Tenth House*. See Tables thereof in *Clavis Astrologiæ*, pag. 382, 383, &c.

Right Line, Is that which is equally distended between its points; that is, hath nothing of turning or bending any way, and consequently of all Lines is in its nature the shortest.

Right Sphere, See Sphere.

Right Line, See Line.

Roman Indiction, See Indiction.

Rod, / Rood, } See the *Appendix* of Measures.

Rule of Three, A Rule in Arithmetick, so called, because by the help of Three Numbers given, it finds out a Fourth unknown; and for the Excellency of its use is stiled, *The Golden Rule*: The way is, to multiply the Third Number by the Second, and dividing by the First, the Quotient shall be the Fourth Number sought. As if the

Question were thus: If a Pillar of 6 Foot high cast a Shadow of 10 Foot; how high must that Tower be that casts a Shadow of 125 Foot? Set your Numbers thus, still observing to set Numbers of the same Nature over against another.

(1) (2)
10 Z 6
(3) 125 75 (4)

And having wrought it, you will find the Quotient to be 75 Foot, which is the heighth of the Tower enquired after, *viz.* Set it thus, 10 : 6 :: 125 : 75. And here you may observe, that so oft as 10 is to be had in 125, *viz.* 12½, so is 6 in 75, *viz.* 12½ also.

Ruminant Signs, [from the Latine, *Rumino*, Signs chewing the Cud] Are those Signs of the Zodiack represented by Creatures that use that Quality, *viz. Aries*, *Taurus*, and *Capricorn*. And it seems the *Moon*, in any of them, causes Effects somewhat like that of Beasts, holding their Meat in their Throat, and chewing it over again. For Physicians caution us by no means to take Physick then, because 'twill lie long in the Stomach, and be apt to be cast up again by Vomit; and therefore Vomits do best then.

Rythmos, A Greek word, signifying Number, or rather the Harmony and Proportion of Numbers. Whence come the Words *Arithmetick*, *Logarithms*, *Rithm*, which we commonly write *Ryme*, &c. It also signifies Metre, Rythm, or Verse, as the *Psalms of David* are usually put into Meter, *&c.*

S. Sagitta-

S

SAgittarius, [Lat. the Archer, or Bowman, from *Sagitta*, an *Arrow*, in Greek 'tis called alſo *Chiron*, and *Philyrides*] is the 9*th*. in order of the 12 Signs of the Zodiack, the Houſe of *Jupiter*, and Triplicity of him and the *Sun*. The Ancients would have the *Dragons-head* to be exalted in it; but many modern Artiſts do not agree thereunto. 'Tis a fiery common Sign; in the firſt *Mediety*, (or half) Humane; in the reſt, *Ferine*, wild, or beſtial) The reaſon of the name of this Sign muſt be drawn from the Poetical Fable of *Chiron*, the Son of *Saturn*, who was a Centaur, (that is, half a Man and halfe a Horſe) Whence the Herb *Centaury* is ſo called, he being the firſt that found it out, for he had great skill both in Herbs and Aſtronomy; inſomuch that at laſt (as the Story goes) he was tranſlated into Heaven, and turn'd into this Conſtellation.

Sattellites, [a Latin word, ſignifying properly Gentlemen of the Guard, or Soldiers attending a Prince for the ſafety of his Perſon] Is taken by Aſtronomers for thoſe Planets who are continually waiting upon, and roll'd round about another Planet; as *Venus* and *Mercury* may be called the *Satellites* of the *Sun*. But the word is chiefly uſed for thoſe new diſcovered ſmall Planets, or little Erratick Stars, which make their Revolutions about *Saturn* and *Jupiter*, and retain their

Bodies for their Centre; of which, four belonging to *Jupiter* and two to *Saturn*, were lately discovered by *Galilæus*.

Saturn, The ſloweſt of the Planets, and moſt remote from the Earth, his Sphere being immediately next under the Heaven of the Fixed Stars, by reaſon of which diſtance, he ſeems to us the leaſt, though in truth greater than any of all the Seven, except the *Sun* and *Jupiter*: Of a leaden, whitiſh, ſomewhat obſcuriſh colour; by nature cold and dry, and ſo inimical to the nature of Man and all Creatures, that he is generally counted the *Greater Infortune*. He is ſlow in Motion, requiring 29 years, 157 days, and 22 hours to finiſh one Revolution in the Zodiack; and his greateſt North Latitude is 2 *degr.* 48 *min.* but towards the South 2 *degr.* 49 *min.*

Scalenum, [From *Scala*, the Latin word for a Ladder, with which this Figure has ſome remote reſemblance] Is a kind of Triangle, having all its Angles and Sides unequal, whereby 'tis oppoſite to an Equilateral Triangle; the Mean between them both is the Triangle called *Iſoſceles*, which has two of its ſides only unequal.

Scenography, [From the Greek words *Senè*, a Houſe or Tabernacle, and *Grapho*, to write or deſcribe] Is a Model or Deſcription of the Front and Sides of a Building, or the Art of rightly contriving Draughts in Architecture.

But in *Perſpective*, the *Scenographick* appearance of any Figure, Body or Building, is that Side that declines from, or makes Angles with that ſtreight Line imagined to paſs through the two outward convex points of your Eyes, generally called by Workmen the *Return* of a fore-right Side; and differs

differs from the Orthographick Appearance in this, that the latter represents the Side a Body or Buildings as it is seen, when the Plain of the Glass stands parallel to that Side. But *Scenography* represents it as it seems through a Glass not parallel to that Side. See *Practical Perspective*, fol. 4.

Sciography, [From *Scia*, Greek for a Shadow, and *Grapho*, to write or describe] Is the Art of Shadows, comprehending Dialling, and part of Astronomy, as far as serves for finding out the hour of the Day or Night, or other Question, by the Shadow of the *Sun*, *Moon*, or *Stars*.

Scheme, [From *Schema*, a Greek word, signifying a Form, Figure, or Shape of a thing] 'Tis used by Astrologers mostly for the Representation of the Celestial Bodies, in their true Places for any moment; or an Astrological Figure of the Heavens, often termed *Schema Cœli*, and the doing of it, *Erecting or Drawing a Scheme*. 'Tis taken likewise for the Draught or Representation of any Geometrical or Astronomical Figure or Problem by Lines sensibly to the Eye, though these are more frequently called *Diagrams*.

Scorpio, [Latin, the *Scorpion*] The Eighth Sign of the Zodiack, and House of *Mars*. 'Tis called so, by reason of the sympathy it has with our Terrestrial Scorpions, who when the *Moon* is in this Sign, are said to be more fierce and dangerous. Nay, Authors affirm, that a House begun to be built when this Sign is on the Ascendent, will continually be haunted with Serpents. Its nature is prolifick, watery, and Fixed; but venomous, treacherous, boasting, *&c.*

Secant, See *Sine*.

Second, The sixtieth part of a Minute.

Sector, [Lat. a Cutter] The Sector of a Circle is defined by *Euclid*, *Lib.* 3. to be a Figure contained under two Right Lines, which constitute an Angle at the Centre, and the Circumference comprised between the same Lines. Hence the word is used for a Mathematical Instrument of excellent use, whereof our worthy Artist Mr. *Edmund Gunter* has written a compleat Treatise, to which I refer you.

Section, To cut a Line or Figure in 2 parts, *&c.*

Section-conique, A Term in solid Geometry, to cut the *Cone* into its usual parts, as to shew the Plain of the *Elipsis*, *Parabola*, *Hyperbola*, of which see Mr. *Anderson*'s *Stereometrical Propositions*.

Segment [Lat. from *Seco*, to cut] of a Circle, Is a Figure comprehended under a Right Line and the Circumference of a Circle, whereby so much seems to be *cut off* from the rest.

Semicircle, [Lat. half of a Circle, whence in the Sphere and great Circles it imports always 180 Degr. and in the Zodiack six Signs; *Semis* in Latin signifying half.

Semi-sextile, Semi-quintil, Quintil, Sesquiquintil, Biquintil, Sesquiquadrate. See *Lill.* 511.

Semidiameter, Half the Diameter.

Semiquadrat, [Lat. Half a Square] Is one of those new Aspects invented by *Kepler*, commonly marked thus, *S. q.* and happens, when two Planets are distant from each other the fourth part of the Semi-circle, or one Sign and 15 Degrees. This Aspect is chiefly regarded in Judgments on Diseases, or in Lunations concerning the Weather; for then the *Moon* becoming the visible, makes her effects manifest: Whence that vulgar Latin Proverb,

Quarta,

Quarta, Quinta, Qualis; Tota Luna Talis.

As is the Fourth and Fifth days weather.
So's that Lunation altogether.

Separation, Is when two Planets have been in Conjunction or Partile Aſpect, and the Lighter by reaſon of his Swifter motion, is going out of the moiety of both their Orbs. And this is two-fold: Firſt, Simple, when both are direct, but the lighter Planet in moſt Degrees. The ſecond Mutual, when the Planet that is in moſt Degrees, is Direct, and he in the leaſt Degrees Retrograde, for then there is a Separation made on both ſides. The conſideration of this is of great uſe in Aſtrology; for admit two Planets, being Significators in a Queſtion of Marriage, are lately ſeparated but a few minutes, we may judge there has been but few days before great probability of effecting the Marriage; but now it hangs in ſuſpenſe, and there ſeems ſome diſlike or rupture in it: and according to the number of Degrees that the ſwifter Planet wanteth ere he can be wholly ſeparated from the more ponderous, ſo many days, weeks, months and years as the Signs are movable, common, fix'd, may it be ere the two Lovers will wholly deſiſt, or ſee the matter quite broke off.

Septangulus, [From *Septem*, Latin for ſeven, and *Angulus*, an Angle] A Figure in Geometry conſiſting of ſeven Angles, whether it be Plain or Solid, Regular or Irregular. 'Tis ſometimes called *Heptangulus* alſo, from the Greek word *Hepta*, ſeven.

Septentrional, [Latin, from *Septentrio*, the North] Northern, of or belonging to the North; so we say, *Septentrional Latitude*, and *Septentrional Signs*, as the first six Signs, because they decline towards the North from the Equinoctial.

Serpentine Line, A crooked winding Line, that incloses it self continually, as a Serpent wraps her self up in folds. See *Spiral*.

Sesquiquadrate, One of the new Aspects, when two Planets are distant from each other as much as makes a Square, that is, 3 whole Signs, and also half another Sign, that is in all, 4 Signs and 15 Degrees of the Zodiack. 'Tis of the same nature with the Square, unlucky, but in a less degree.

Sexagenary, [Lat. from *Sexaginta*, sixty] of or belonging to sixty. And indeed this Division of Degrees into 60 Minutes, and each minute into 60 Seconds, is of great use in Astronomy; for being a Number divided by many, 'tis the most convenient for Calculation; to ease which the more, there are Tables called

Sexagenary Tables, contrived of parts proportional, where by Inspection you may find the Product of two Numbers to be multiplied, or the Quotient of two that are to be divided, *&c.*

Sexangle, A Figure consisting of six Angles.

Sextans, [Lat.] A sixth part.

Sextile, [Lat.] An Aspect, when two Planets are distant one sixth part of the Zodiack, *viz.* two whole Signs. 'Tis sometimes called in Greek *Hexagon*, which signifies the same thing. 'Tis of the nature of a *Trine*, good and friendly, but more weak and imperfect.

Shape

Shade of Extuberantt, The Shadow made by the greateſt ſwelling part of a Body, more particularly of a Globulous Body.

Shank, Shifting of Tides. See *Maximer Mag.* Fol. 6.

Sidereal Year. See *Solar Year.*

Signifer, [Lat. from *Signum*, a Sign, and *fero*, to bear or carry] The Zodiack is ſometimes ſo called; becauſe therein are all the 12 Signs. See *Zodiack.*

Significator, What in Horary Queſtions, and what in Nativities, See *Lilly* 507.

Signs, Are certain Notes in the Zodiack, divided by equal Twelve parts, each of which conſiſt of 30 Degrees in length, and 12, or rather 18, in breadth. And that the Natures of them may be taken notice of, whether by reaſon of the Fixed Stars that are with them reſpectively; or by thoſe effects which the *Sun*, paſſing through each of them, cauſes in things below; they are mark'd and called by Images and Names of Animals, or other things which might beſt repreſent their Qualities; in which the Antients were very curious, not to give Appellations at random, but after curious diſquiſition of all circumſtances, ſo that it would be almoſt impoſſible to give them any other names, which ſhould hint ſo many of their Properties as they already given do; which are, *Aries*, *Taurus*, *Gemini*, *Cancer*, *Leo*, *Virgo*, *Libra*, *Scorpio*, *Sagittarius*, *Capricornus*, *Aquarius*, and *Piſces*. Now you muſt note, that all Stars are ſaid to be in one of theſe Signs, not onely thoſe which are within the Latitude of the Zodiack, but thoſe without it too: So that as if the Ecliptick were divided into 12 equal parts, and Circles from

from the Points of the Diviſions deſcribed by or through the Poles of the Zodiack; whatever is included between thoſe two Semicircles, or in the Superficies, which the two Semicircles encloſe from one Pole of the Zodiack to the other, ſhall be ſaid to belong to that Sign, which is included within theſe two Semicircles of the Zodiack.

Signs, of { Long Aſcenſion / Short Aſcenſion } are { ♋ ♌ ♍ / ♎ ♏ ♐ / ♑ ♒ ♓ } / { ♈ ♉ ♊ }

Theſe Signs of long Aſcenſion continue two hours and more upon the Aſcendant, but thoſe of ſhort Aſcenſions little more than an hour, and ſome leſs, for the firſt Aſcend rightly, the laſt obliquely; for underſtanding whereof, we muſt note, that thoſe Signs are ſaid to Riſe obliquely, with whom there Aſcends a leſſer Portion of the Equator; whence it follows that the Arch of the Zodiack containing ſuch Signs Aſcends more Crookedly than the Equator does; But thoſe Aſcend rightly, who riſe more right than the Arch of the Equator anſwering to them, that is, Aſcend with more Degrees than the Equator: Furthermore, thoſe Signs that Aſcend obliquely, Set afterwards Rightly, becauſe a leſſer portion of the Equator goes down with them, and thoſe that Aſcend Right, Set obliquely.

Sines, Tangents, and Secants. } Theſe Terms having common relation to Spherical Trigonometry: I have thought fit to Explain them here all at once.

For the word Sine, in Latine *Sinus*, it ſignifies properly the wideneſs between two Terms, hence that Crookedneſs within the Breaſt and the folding

folding of the Arms which we call a persons Bosom is called in Latin *Sinus*; so the space contained between Crooked shoars, which run out far like two Arms of the Continent into the Sea, in *English* called a *Bay*, is expreſt likewise in Latin by this word *Sinus*. Hence by way of similitude, Geometricians call the the Halves of the Chords, or Right Lines, which shut up the Cavity of any Arch, *Sines*.

Tangent comes from the Latin word *Tango* to Touch, and *Secant*, from *Seco* to Cut, the reason of which Appellations are plain, the first being a perpendicular Right Line without a Circle, falling upon the end of the Diameter of the Circle, the second a Line drawn from the Centre of the Circle towards the first, and Cutting the Circle, which if Continued long enough, the first must at length needs Touch it; but for more evident satisfaction, See Figure 1. where the Lines that are called Sines, Tangents, Secants, and their Complements have the word Sine, Tangent, Secant, *&c.* over them.

Sine, Tangent, Secant, } Complement, The Arch of a Circle numbred in Degrees, that any given Sine, Tangent, or Secant wants of 90 Degrees: as the Sine, *&c.* of 55 Degrees being given, its Sine, *&c.* Complement shall be the Sine of 35 Degrees.

The use of these Sines, Tangents, and Secants, and their Complements, are very great in the Measuring of all sorts of Triangles; as well Rectilineal, as Spherical: Of which see *Norwood's Trigonometry*, where they are largely Explain'd, also those called versed Sines.

Sinister

Siniſter Aſpect, [Lat. Left-handed, or towards the Left-hand] Is a poſition of two Planets that happens according to the ſucceſſion of the Signs, as *Saturn* in *Aries*, and *Mars* in the ſame Degrees in *Gemini*; here *Saturn* is ſaid to caſt a Siniſter Aſpect to *Mars*, but on the Contrary, *Mars* beholds *Saturn* with a Dexter Aſpect, becauſe 'tis Contrary to the Succeſſion of the Stars, and this *Siniſter Aſpect is of more force than a Dexter one*, ſays an Ingenious Modern Author (*Salmon Synopſis Medecina.* p. 14) but acknowledges his opinion therein to be Contrary to that of the Ancients.

Sol, [Lat. the Sun] The King of the Planets, Fountain of Light, and Eye of the World, by nature hot and dry; a Fortune by Aſpect, but Infortune by Body; he has many names given him, both by Poets and other Authors, as *Sol*, *Titan*, *Helios*, *Apollo*, *Pæan*, *Dieſpiter*, *&c.* His mean Motion is 59 m. and 8. s. ſometimes but 57 m. 16 s. never above 61 m. and 6. s. never Retrograde, always without Latitude, becauſe always in the Ecliptick, *&c.*

Solar Year, Is either Tropical or Sideral, Tropical [from *Trope* a Greek word ſignifying Converſion, or Returning, whence the two Tropicks take their name] is that ſpace of time wherein the *Sun* returns again to the ſame Equinoctial or Solſtitial Point, which is always equal 365 days, 5 hours, and about 55 minutes; the Sidereal or Starry year, is the ſpace wherein the *Sun* comes back to any particular fixed Star, which is a little longer than the other; *viz.* 365 days, 6 hours, and 9 minutes.

Solid, Lat. Is a Body that hath both Length, Breadth,

Breadth, and Thickneſs, and all Solids are either Spherical or Eliptical, which have properly no Side or Angle; or Priſms, which are contained in Plains; or Trapezia's, which are Bodies Irregular.

Solid Number, Is ſo called by way of Analogy, being that which is made of three Numbers mutually Multiplying one another, which Numbers ſhall be called its Sides, as are 2. 3, 4. in reſpect of 24.

Solſtice, [In Lat. *Solſtitium* from *Sol* the *Sun*, and *Sto* to ſtand] Is that time when the *Sun* Entring the Tropical Points is got furtheſt from the Equator, and before he returns Back towards it, it ſeems for ſome days at a ſtand, being moved in the ſame Parallel, ſcarce making any Lines but almoſt perfect Circles, ſo ſmall is his progreſs; theſe *Solſtices* are two; the *Eſtival* or Summer Solſtice, when the *Sun* Enters *Cancer* the 11th of *June*, making the longeſt Day and ſhorteſt Night, and the *Hyemal* or Winter Solſtice on the 11th of *Decemb.* when he Enters *Capricorn*, the Nights being at longeſt, and the Days at ſhorteſt: but this is only in theſe Northern Regions, for under the Equator there is no variation, but a Continual Equinox, and in the Southern parts *Capricorn* makes the longeſt Day, and *Cancer* the longeſt Night.

Solution, An unfolding, explaining, or giving ſatisfaction to any Queſtion, from *Solvo* in Latin, to looſe or unty.

Speculum, [A Latine word ſignifying properly a Looking-Glaſs, but uſed for a kind of a Table framed by Aſtrologers after they have erected the Figure of a Nativity; Containing the Planets and

and Cusps with their Aspects, Terms, &c. all in their proper places; thereby to find out the progression of the Significators to Promittors, and Rectify the Estimate time of the Scheme by Accidents: See the Form and manner of drawing it, in Mr. *Coley*'s *Clavis Astrologiæ*, &c.

Sphere, [A Greek word, in Latine *Globus*, a round thing or Ball in English] Is defined in Geometry by *Euclid* to be, A Solid Body, contain'd in one only Superficies; in the midst whereof there is a Point conceived, to which all Lines drawn from the Superficies are equal.

But in Astronomy 'tis taken more specially for the whole Frame or Machine of the World, being of a Spherical Figure: but most strictly, for the *Primum Mobile*, embracing all the other Orbs and Celestial Bodies, which, in the space of one Natural Day, is volv'd and carri'd round on the Poles of the World about the Earth, according to *Ptolomy*; and which by reason of its different habitude, or respect of the parts of the Earth to its Poles, is said to be either Right or Oblique.

A Right or Direct Sphere hath both the Poles of the World in the Horizon, and the Equinoctial transiting the Zenith; so that all the Circles parallel to the Equator make Right Angles with the Horizon, and by it are divided into two equal parts, the *Sun*, *Moon*, and *Stars* being always 12 hours above, and 12 hours below the Horizon; consequently the Days and Nights alalways just 12 hours long: and is called *Right*, because all the Celestial Bodies, by the Diurnal motion

motion of the *Primum Mobile* Aſcend directly above, and Deſcend directly below the Horizon: As at the Iſle of St. *Lawrence*, and other places under the Equator. The aforeſaid Figure is a repreſentation of the Right Sphere.

An Oblique Sphere is, where one of the Poles is elevated above, the other depreſſed below the Horizon, as in all places wide of the Equator. The adjoyned Figures is a repreſentation of the Oblique Sphere.

A *Parallel Sphere* is ſo called, becauſe there the Equator lies directly in the Horizon, and is parallell thereunto; the whole year there being but as one Natural day, *viz.* one half year Day, and the other Night. The adjoyning Figure repreſents a Parallel Sphere.

From this diviſion of the Sphere ariſes the diverſity of Aſcenſions, to wit, of the Degrees of the Equator, and parts anſwering thereunto, thence denominated *Right* or *Oblique*. For in a Right Sphere, all the Aſcenſions are Right; but in an Oblique Sphere, Oblique.

All which is demonſtrated ſenſibly in that Mathematical Inſtrument called the Sphere, which hence takes its name, having the Poles, Lines, and Great Circles therein repreſented.

Beſides this, the Orb of each Planet is called the Sphere of ſuch a Planet: and ſometimes the word

word is likewise used for the Sphere of a Planets Activity, and that extension of Light and Vertue, so far as any Planet is capable of making or receiving a Platick Aspect; and how far that is respectively in each, see **Platick.** See also **Atmosphere.**

Spheroides, Is a solid Figure made from the Plain of an *Elipsis* turned about upon its *Axis*, and Explain'd in most Geometrical Authors.

Spiral Line, [Lat.] A Tortuous or crooked Line, unequally distant from the midst of the space, howsoever inclosed, which seems to be almost a Circle, only it does not meet, and like that, run again into it self, but keeps on at a proportionate distance or deviation, like the Coyling of Ropes, or the folding of a Serpent, when she lies close in so many Turns with her Body, and is therefore sometimes called a Serpentine Line.

Square, In Geometry, is a Figure that is Equilateral and Right Angled; that is to say, which hath the four Sides equal, and the Angles Right. But in Astrology, a **Square** in an Aspect between two Planets that are distant a fourth part of the Circle, or 90 Degrees, for from those Points, Lines drawn to one another, will make a perfect Equilateral Rect-Angled Square. This is an unfortunate Aspect, but not so prejudicial as an *Opposition.*

Square Number, A Number equally even, or contained under two equal Numbers; as 25, which rises equally even by the mutual multiplication of 5 into or by 5.

Square Root, Is any Number, which being multiplied into it Self, makes a Square Number. So 25 is the Square of the Side or Root 5.

Square

Square, Called in Latin *Norma*, *Gnomon*, or *Canon*, is an Instrument consisting of two Shanks, including a Right Angle, commonly known to, and used by Carpenters, *&c.*

Squaring the Circle, Is a contriving to any Circle a Square equal thereunto, and exactly correspondent: A thing that has puzled the ablest Mathematicians, being in truth, to find out the Area of some Square that shall be exactly equal to the Area of some Circle, so that the Area's of both Figures shall be alike capacious. This, though the great *Archimides*, and others, have not exactly done, yet they have come near enough for any use, and taught those things, which, if fully understood and pursued, the Circle may come to be Squared: For if they have Squared a Parabola, (which is an Area intercepted between two Lines, one Right, and the other Arcular, or bowing) why should not the Circle it self, which consists of two Parabola's, be as well Squared?

Sporades, [from the Greek *Sporos*, scattered up and down, or in several places] Are those Stars dispersed in the Firmament, which were never yet rank'd in any particular Constellation, nor had peculiar names assigned. They are called thus by way of Analogy, from the Islands called *Sporades* near *Crete* in the *Carpathian* Sea, which were not described by *Ptolemy*, nor inserted in the old Maps.

Stade, A Measure or Term in *Geography* and in *Architecture*, also in use among the Ancients, and in Foreign Countreys.

Stationary, and Station, [From *Sto*, Lat. to stand] The Consistence of the Planets in their Eclipses, when they are

furtheſt off their Centre in reſpect of the Zodiack, and being to be either Direct or Retrograde, is called their Station. To underſtand which, we muſt note, that all the Planets, except the *Moon*, are moved in their ſmall Orb or Epicycle about the *Sun*, whom they reſpect as their Centre, (according to *Tycho*) and in the mean time both they and their great Orbs, or Deferents, are carried about by the *Primum Mobile*, yet keep on their proper Motion according to the ſucceſſion of the Signs, and have four remarkable Points: Firſt, their Apogæum, where they are furtheſt from the Earth, and are all above the *Sun*, joyned with him in the ſame Ecliptical Degree, whereby the Superiors become Oriental, but the Inferiors Occidental. The ſecond is their Perigæum, where they are below the *Sun*, and neareſt to the Earth, yet joyned again to the *Sun* in the ſame Degree of the Ecliptick, and from thence the Superiors become Occidental, and the Inferiors Oriental. The other two points are on each ſide, in which they are fartheſt removed from the *Sun*, and are called their *Stations*, becauſe as they are Aſcending therein to their Apogæum, or Deſcending therein to their Perigæum, they ſeem in a manner to ſtand ſtill, and not change their place in the Zodiack: Of which, the firſt Station is that on the right hand of the *Sun*, where they begin to go backward in the Zodiack, paſſing by their Perigæon to their ſecond Station, when being on the left hand of the *Sun*, they begin to grow Direct.

Hence a Planet is ſaid to be *Stationary*, when he is about either of theſe his Stations, Aſcending or Deſcending in his Epicycle to his Apogæum

or

or Perigæum, for that he seems not at all, or insensibly at least, to be moved in the Zodiack, but persisteth long in the same Degree, as long as he Ascends or Descends in those parts of his Orb, which are directly under one Degree of the Zodiack.

Stereometrie, [From two Greek words, *Stereon*, a Solid, and *Matria*, a Measure] Is none of the least amongst the Mathematical Sciences, and properly a Branch or Handmaid to Geometry; Treating of Measuring all sorts of Solid Bodies.

Stilbon, [From the Greek word *Stilbos*, bright or shining] One of the names of the Planet *Mercury*, because he twinkles more than any of the rest of the Planets.

Steriography, Or the Description or Drawing the Forms of Solids upon a Plain, *&c.*

Statick, The Science of Weights and Measures, a Species of the Mechanicks, shewing the Properties and Motion of Ponderosity, or Heaviness and Lightness of Bodies, *&c.*

Sublunaries, [From the Latin *Sub*, under, and *Luna*, the *Moon*,] All things below the *Moon*, as the Elements, and all things mixt or composed of them, whether Perfect or Imperfect, Animated or Inanimated, all being liable to the Influences of the Celestiall, and especially the Impressions of the *Moon*, as the common Conveyancer of the Superiors Vertues down to these Inferiors.

Stratarithmetrie, [From the Greek *Stratos*, an Army, and *Arithmetice*] Is the skill appertaining to War, by which a man can set in a Figure Analogical to any Geometrical Figure appointed, any certain number or sum of men of such a Figure capable, and certifie of the over-plus (if any

be) and of the next certain sum, which, with the over-plus, will admit a Figure exactly proportional to the Figure assigned. By which skill also, of any Army or Company of Men (the Figures and Sides of whose orderly Standing or Array is known) he is able to express the just number of men within that Figure contained, or (orderly) able to be contained: And this Figure and Sides thereof he is able to know either by, & at hand, or afar off. See Dr. *Dee*'s *Preface to Euclid*'s *Elements*.

Stylobata; The Pedestal or Foot-stool of a Colum or Pillar, a Term used in *Architecture*.

Stile, The Gnomon or Cock of a Dial, that casts the Shadow upon the Hour-Lines.

Succedent-Houses, Are so called, because they *succeed* or follow Angles in a Celestial Figure; as the 11*th*. the 2*d*. the 5*th*. and the 8*th*. which succeeding, is yet not so much in Order, as in Condition and Dignity: For a Planet in them is counted moderately strong, though not so much as in Angles; whereas in Cadent Houses he is most of all debilitated.

Sud, An odd word used among Sailors, as to the Wind, *&c*.

Subtense, or **Chord Line**, [Lat.] Is a Line drawn under an Arch of a Circle, or a Right-Line drawn within a Circle, at each end terminated in the Circumference, cutting the Circle beside the Diameter into two unequal parts, to both of which it is subtended, that is, hung or drawn underneath them.

Subtraction, [Lat. from *sub* and *traho*, to withdraw] A common Rule of Arithmetick, teaching, how artificially to take a lesser Number out of a greater, and find what remains over-plus of the greater,

greater; when the value of the ſmaller is ſubſtracted, that is, withdrawn, or taken away from it.

Succeſſion of the Signs, Is that order in which they are uſually reckoned; as firſt *Aries*, next *Taurus*, then *Gemini*, &c.

Sunday-Letter. See *Dominical Letter.*

Summer Solſtice. See *Æſtival Solſtice.*

Superficies, As much as to ſay, *Superna facies*, in Latin, that is, the uppermoſt or outward face: for by this word, Geometricians mean the external part of any Body, which is beheld with the eyes, and touch'd with the hands; being defined by *Euclid* to be a Longitude and Latitude without Depth or Thickneſs: whereby it differs from a *Point*, which has no Dimenſion; from a *Solid*, that has all kinds of Dimenſion; and from a *Line*, that enjoys only Length, and is void of both Breadth and Depth. There is the Superficies of a Sphere of a Cone, of a Cylinder Cnoyd Parabolique, Hyberbolique Eliptick, or the Face or outſide Covering of thoſe ſolid Bodies, well known to Expert Geometricians, *&c.*

Superiors, *Saturn*, *Jupiter*, and *Mars*, are called ſo by way of Eminence, becauſe their Orbs are above the *Sun*; as the other three Planets, *Inferiors*, for the contrary reaſon.

Symmetrie, A Greek word ſignifying *Proportion*, but it is uſually meant a Faculty acquired by Precepts of Geometry which in Architecture purſues the Order of Nature, and makes all the parts of any Structure compleatly agree to, and with the whole.

Supplement, That which Compleats or Supplies.

Surd, [In Latin properly Deaf or unreaſonable] whence *Euclid* calls Figures Incommenſurable to

the Rational Square, *Surds*, and so likewise Lines Incommensurable to, (that is having not any common Measure with,) the proposed Rational Line, are called *Surds*, or Irrationals, or things Inexplicable.

Sursolid, Or the 5th power from the Root or Side in Number; As suppose 2 is the Root or Side, the 4 is the 2d power, 8 is the Cube of 2 the 3d power, 16 is the Squared Square or 4th power, 32 is the 5th power of 2, and is called the *Sursolid*, 64 the 6th power or squared Cube, 128 the 7th power, or the second *Sursolid*, &c. as is plainly taught in all Books Introductory to *Algebra*.

Surface. See *Superficies*, being the same.

Swift in Motion, A Planet is said to be so, when by his own proper diurnal Motion he exceeds or moves further than his mean diurnal Motion! Which is accounted amongst the Chief Fortitudes of a Planet: As to be *slow in Motion*, that is when his Motion happens to be less than his mean Motion is a great Debility, the reason whereof see in the word **Retrograde**; The mean Motions of all the Planets are daily, (that is in the space of 24 hours) as follows,

Saturn 2 Minutes, and 1 Second, *Jupiter* 4 min. 59 sec. *Mars* 31 min. 37 sec. the *Sun* 59 min. 8 sec. *Venus* 59 min. 8 sec. *Mercury* 59 min. 8 sec. and the *Moon* 13 deg. 10 min. and 36 sec. in a day.

So that you need only look in an Ephemeris, and take the diurnal Motion of a Planet by Substracting his place the day before, if be he di-

rect,

rect, or the contrary, if Retrograde, and you have his present Motion, which compared with this Table, you see whether he be to be counted Swift or Slow. Note, you will find some Planets move much further sometimes in a day, but these are their true mean mean Motions, which if exceeded he is reckon'd *Swift*, and the more he exceeds it, so much the stronger.

Symboles, Are Letters used for Numbers in Algebra, or Arithmetick in Species.

Symtots, Used by Dr. *Wallis*, 'tis a Term in Solid Geometry, and largely explained by most Authors that treat thereof, and of Operations therein by *Algebra*.

Synodus, [A Greek word signifying a meeting or Convention] used by Astronomers Commonly for a Conjunction of two or more Planets, and sometimes for their meeting by Beams in other Aspects,

Synopsis, A brief and orderly Representation or view taken of a thing.

Systeme, A Greek word whereby is intended the general Constitution, Fabrick and Harmony of the Universe, or an orderly Representation thereof according to some noted Hypothesis, wherein the Celestial Bodies are so disposed amongst themselves, and in respect of the Earth; as their Scituation, Order, Motions and Passions, may in such an Authors opinion best answer Appearances and Philosophical Demonstrations; To this purpose the Ancients agreed, that the Globe of the Earth and Sea should be the Centre of the World, about which was diffused the Air, and round that the more light Element of Fire; Then the Orb of the *Moon*, and so *Mer-*

cury, *Venus*, *Sol*, *Mars*, *Jupiter*, and *Saturn*, in order, all reſpecting the Earth as their Centre; After which they placed the Firmament or Orb of the Fixed Stars, and laſt of all the *Primum Mobile*.

But of late, *Copernicus*, (a moſt ingenious Aſtronomer) the better to Solve the Appearances Invented, or rather revived; for it was many Ages before ſtarted by ſome old Phyloſophers, but now buried and forgot) he, I ſay, revived another Hypotheſis, which Conſtitutes the *Sun* Immoveable in the Centre of the World, next the Orb of *Mercury*, then *Venus*, in the third place the Globe of Earth, with the *Moon* continually moving about it, to which Globe of Earth, he aſſigns a threefold Motion, *Diurnal*, in 24 hours from Weſt to Eaſt, which was before attributed to the *Primum Mobile*, *Annual*, which the *Sun* antiently challeng'd, and a third of *Libration*, whereby he ſolv'd the Inequality of the Equinoxes, and obliquation of the Ecliptick from the Equator, for the 5*th*. Planet he places *Mars*, then *Jupiter*, then *Saturn*, and laſt of all the Sphear of fixed Stars.

Since this, the Noble *Tycho Brahe* propoſed his Hypotheſis, making the Earth the Centre of both the Luminaries, and the Orb of fixed Stars, but the *Sun* the Centre of the other four Planets; whom he counts all Eccentrick to the Earth, and conſtantly moving in the fluid Ether about the *Sun*, &c.

All theſe Syſtemes have found their Diſciples, and Propugnators: if any have a mind to be better Inſtructed in all or any of them, there are Sphears extant fitted for every of them, and ſhewing

ing all the Motions and Affections of the Celeſtial Bodies truly, according to the intention of each Hypotheſis.

Syzygiæ, [The word originally Greek ſignifies a Marriage, Society, or Familiarity,] but is uſed for the Entercourſe of the Planets one with another, or the Commixtures of their Beams, either by Corporal Conjunction, or other Aſpects; and therefore you ſhall find in ſome Ephemerides over the Left hand page, *Syzygiæ Lunares*, that is, the *Lunar* Aſpects.

T

TAbles Larodromiques, or Tables of Traverſes in Navigation, you may ſee a large one in Sir *Jonas Moor*'s *Syſtem of Navigation*, in two large Quarto Volumns, Printed but few years ſince, for the uſe of the Boys deſigned for Navigation in Chriſts Church *Hoſpital*.

Table of Houſes, are Tables Calculated for the Aſſiſtance of young Artiſts in ſetting a Figure; for by the help thereof the meaneſt Capacity may preſently Learn to do it, but without them it would be exceeding difficult. See *Tutor to Aſtrology*.

Tare, See *Tret* and *Tare*, diſcours'd in moſt Books of Arithmetick.

Tangent, See *Sine*.

Taurus, [Lat. the *Bull*] the ſecond Sign of the Zodiack, Fixed and Earthly, the Houſe of *Venus*,

Venus, and Exaltation of the *Moon*, called by this name, becauſe 'tis found by Experience, Perſons born under it are Laborious, but ſlow of Apprehenſion, and have high Foreheads, and ſticking out on both ſides like Bullocks; or rather becauſe this Sign does more peculiarly Affect ſuch Cattle; and being poſſeſt with an Infortune, threatens Murrain and Deſtruction to them.

Teleſcope, [Gr. a large Optick Inſtrument, invented by *Galilæus*, for obſerving the Celeſtial-Bodies, whereby ſeveral new Phænomena have been diſcovered and great Improvements made in Aſtronomy.

Tenail, A Term uſed in Fortification. See *Authors*.

Temperate Zone. See *Zone*.

Term, In Geometry is the bounds or limits of a thing, as a Point of a Line, *&c.* 1ſt. 2d. 3d, *&c.* middle Term in *Trigonometrie*.

Terilla, A little Body or Inſtrument that Repreſents the Earth; ſome are cut in *Loadſtones*.

Terms, In Aſtrology, are certain Degrees of the Signs, in which ſuch reſpective Planets have been obſerved to have their Virtues and ſtrength encreaſed; whence a Planet in thoſe Terms is ſaid to have two Dignities; To know what Terms each Planet has. See the ordinary Table of *Eſſential Dignities*, every year in Mr. *Lillies Almanack*.

Tetrahedron, [From the Gr. *Tetra* four and *Hedron* a Side] A ſolid Figure comprehended under 4 equal Equilateral Triangles.

Tetragonus, or **Tetragonum**, [from the Greek *Tetra* four, and *Gonia* an Angle] Signifies any Figure conſiſting of 4 Angles; but is uſed generally by Aſtronomers for a ſquare Aſpect. Thau-

Thaumaturgick, [A Greek word signifying the Wonder-working] Is one of those Arts mentioned by Dr. *Dee* in his Preface to *Euclid*, and by him Defined to be that Art Mathematical, which giveth certain order to make strange works of the Sense to be perceived, and of men greatly to be wondred at. See Dr. *Dee*'s Preface to *Euclid*.

Theodelite, A Mathematical Instrument for the Surveying of Land. See *Rathbourn*'s Surveying.

Theme, Is frequently used by Astrologers for the Position of the Superior Bodies at any moment, when they require the success of any thing then begun, or proposed: Calling their Figure *Thema Cœli*.

Theorem, A Greek word signifying a Proposition, which requireth the searching out, and demonstration of some Property or Passion of some Figure, wherein is only Speculation and Contemplation of mind, without doing or working of any thing; whereby it differs from a Problem, in which something is always to be done: Or I may say, Theorem is a Proposition, shewing how to work a Question in Arithmetick or Geometry, a Rule prescribed. See *Euclid*'s *Elements*, where you have the Definitions of Propositions, Theorems, Problems, *&c.* Thrnce comes the word Theory, of any Art or Subject matter, and from Theory or Speculation, the Practick part, *&c.*

Topographie, [Gr. from *Topos* a place, and *Grapho* to describe] The Description of some particular place; See Chorographie.

Thermometre and Barometre, Instruments now used in Glass Tubes, the one shews the Weather, either Hot or Cold, and how it changes to either: And the other Wet and Dry, by the Rising

or

or Falling of the Spirits in the Tube of the one, and the Quickſilver in the other; they are now common and called vulgarly *Weather-Glaſſes*.

Torrid Zone. See **Zone.**

Tranſlation of Light and Nature, Is when a Light Planet ſeparates from a more Weighty one, and preſently Joins to one more Heavy; As ſuppoſe ♄ in 20 Degrees of ♈, ♂ in 15 of ♈ and ☿ in 16 of ♈, here ☿ being a ſwift Planet ſeparates from ☿ and tranſlates his Virtue to *Saturn*; which purports in Judgment, that if a thing be promiſed by ♄ then ſuch a man is ſignified by ☿ ſhall procure the aſſiſtance of a *Martial* man to *Saturn* to effect the Buſineſs; be it a Marriage, a Suit, or the like.

Tranſom, The Vane of a Croſs-ſtaff. *viz.* A wooden member to be ſet acroſs the Croſs-ſtaff, having a ſquare Socket in it, upon which it ſlides ſtiff upon the ſquare of the Croſs-ſtaff, and may be ſet to any of the Graduations on it.

Tranſits, [from the Latin Verb *Tranſeo* to paſs by or over] are a kind of Familiarities of the Stars, acquired by their Motion, through remarkable places of a Perſons Radical Figure; as if the Aſcendant be *Sagittary*, and *Jupiter* at any time by his proper Motion paſs over the Degree Aſcending; the Native is then healthy and fortunate, if *Mars*, he is moved to Choler, imbroil'd in Quarrels, *&c.* And oftimes agreeable Tranſits do bring into Act the matter ſignified by a Direction, whereby we may nearly Gueſs of the Day, when any Conſiderable Accident will happen.

Traverſe, A Term in Navigation. See *To Caſt a point of Traverſe.*

Tra-

Trapezia, Are all ſorts of Irregular Figures in Geometry, that is, ſuch where neither the Sides nor Angles equally Correſpond. The word ſeems to come from the Gr. *Trapeza*, a Table.

Trapezoides, Are a Species of *Trapezia*'s, for they Comprehend all ſolid Irregular Figures, which have not Parallel Sides, and theſe are ſuch, as either are altogether Irregular, or that in ſome thing obſerve a kind of Rule of Equality; as Priſms, *&c.*

Triangle, A Figure with three Angles, whence alſo the word **Triangular**, of or belonging to ſuch a Figure.

Trigon, In Greek, is ſtrictly the ſame with Triangle in Latin; but is uſed for the Aggregate of three Signs of the ſame Nature and Quality, beholding each other with a Trine Aſpect, and are accounted according to the Four Elements; Thus *Aries*, *Leo*, and *Sagittary* are the *Fiery Trigon*, or *Triplicity*; *Taurus*, *Virgo*, and *Capricorn* the Earthly; *Gemini*, *Libra*, and *Aquary* the Aiery; And *Cancer*, *Scorpio*, and *Piſces* the Watry. Hence

Trigonocratores, [*Crator* in Greek ſignifying a Governor] the Lords of theſe Trigons, *viz.* *Sol* and *Jupiter* of the Fiery; *Venus* and the *Moon* of the Earthly, *Saturn* and *Mercury* of the Aiery, and *Mars* alone of the Watry.

Trilateral, Three Sided.

Trigonometry, [A Greek word compounded of *Treis* three, *Gonia*, an Angle, and *Metria* Meaſure] A Mathematical Science, teaching how to Reſolve all Triangles as well plain as Spherical: whereby three Sides or Angles being given out of ſix Contained in a Triangle, the other three unknown

are

are found out; In order to which, the Tables of Sines, Tangents, and Secants, are of use; as shewing the Quantity of the half Chords, which are subtended to parts of the Circumference within the Circle.

Trimorion, Gr. the Aggregate of three Signs Contiguous, by which there is Constituted a square Aspect to the *Apheta* or *Giver of Life*, who coming to that Direction commonly cuts off the Vital Thread; And therefore since three Signs, *viz.* 90 Degrees may sometimes give 120 Degrees of Direction and not more, therefore some think 120 years to be the utmost Extent generally of Humane Life since the Flood.

Tripartition, Or to Divide any Number or Solid into 3 equal parts, *&c.* and so the word Triple, shews you must multiply by 3, or double any Number 3 times, *&c.* Hence Tripartition tells you are to Divide by 3, and Triple to multiply by the same Number, *&c.*

Triplicity. See *Trigon.*

Trine, Lat. an Aspect of Friendship and Amity between two Planets Distant from each other a third part of the Circle, that is, 120 Degrees.

Trochilike, The *Wheel-Art*, or the Mathematical Skill Demonstrating the Properties of all Circular Motions, Simple and Compound; Derived from the Gr. *Trochos* a Wheel.

Tropicks, [from the Gr. *Trope* a Conversion or Turning] Two lesser Circles in the Sphere equally distant from the Equator, *viz.* 23 Degrees½ on each side, being the bounds of the *Suns* Deviation from the Equinoctial, which when he touches he seems to stand still, and soon returns towards the Equator: The Northern one is called the

the *Tropick of Cancer*, that makes our longeſt Day, the Southern one the *Tropick of Capricorn* that makes our longeſt Night.

Trutine of Hermes, [properly a Trowel, and ſometimes a Meaſure] An Artificial method of Rectifying a Nativity by finding out the day of Conception and the place of the *Moon* then: ſaid to be Invented by *Hermes Triſmegiſtus*; but the the ſame being common in moſt Authors, and what makes it the leſs Conſiderable, not much regarded; but the Rectification by Accidents generally followed, I ſhall not here ſet it forth at large. Thoſe that would make uſe of it (and in Childrens Nativities Calculated before Accidents have happened it may be of uſe) may ſee the manner of doing it in Mr. *Coley*'s *Clav. Aſtrol.*

Tuſcan Order, One of the five Ancient Orders in Architecture; uſed by the *Tuſcans* in *Italy*: For the Form of it, and all the other Orders; See *The Compleat Architect.* p. 16.

V

Vane. See *Tranſum.*

Variation of the Needle, The Turning or Deviation of the Needle in the Mariners Compaſs ſome ſmall matter from the true North Point, which happens more or leſs in all parts.

Venus, [Some ſay from the Latine, *Venio*, to come, becauſe every body, ſooner or later, comes to Loves dotage, of which ſhe is Lady] The brighteſt

brightest and most respendant of all the Stars, whether Erratick or Fixt, the *Sun* always excepted; and this not because she is bigger than the rest, but because she is nearer the Earth than any of them, except *Mercury*, as appears by her having Parallax of almost 3 Minutes; whence it may also be gathered, that she is less than the Earth. 'Tis a Feminine Planet, accounted the Lesser Fortune, and finishes her Revolution about the *Sun* in the space of almost one year, and when she is at her greatest Elongation from him, (which is never above 48 Degrees) shines so bright as to cast a shadow: Yea, by the help of the Telescope it hath been observed, that she changes her appearances, and has almost the same variety of *Phases* as the *Moon*, so as sometimes to seem Full, sometimes Half-full, sometimes Horned, and sometimes not at all, *viz.* when she is above or under the *Sun* in Apogæon or Perigæon of her Epicycle, joyned to him in the same Degree of the Eclyptick.

Versed Sine. See *Sine* and *Scheme* 1.

Vertex, In Latine, is the Point in Heaven just over our Heads, Perpendicular to the place where any one Lives. Hence a Star is said to be Vertical, that happens to be in that Point, and Vertically hangs over any place; and so the Equator is said to be Vertical to them who have a continual Equinox; because, it constantly passes by the Vertex of the Place, and the *Sun* at Noon darts down his Rays so perpendicularly, that no shadow is produced; this point the *Arabians* call Zenith; which see afterwards: 'tis called *Vertex*, [which in Latine signifies the Top of a Mans Crown,] by reason it is so right over head, as aforesaid.

Vesperine,

Veſpertine, When a Planet ſets after the *Sun*. See *Matutine*.

Veſperugo, The Evening-Star, *Venus*, when ſhe ſhines after *Sun-Set*; both the words come from the Latine *Veſper*, the Evening.

Vibration, The Motion of a Pendulum in a Clock, which moves in the long ſort a Secant in Time backward and forward.

Via Combuſta *Lat.* See **Combuſt way.**

Via Lactea *Lat.* See **Milky way.**

Violent Signs, Are thoſe which the Malefick Planets, viz. *Saturn* or *Mars* have any notable Dignities, as Houſe or Exaltation, ſuch are ♈, ♎, ♑, ♉, and ♐. And alſo thoſe in which there are any violent fixed Stars of note, and within the Zodiack, as *Taurus*, for *Caput Algol*, and others.

Virgo, [Lat. the Maid or Virgin,] the *6th.* Northern Sign of the *Zodiack*, next to the Autumnal Equinox, and therefore Common: by Nature Earthy, Cold and Dry, the Houſe and Exaltation of *Mercury*.

The Viſual Point in Perſpective, is not that Point the Eye is placed in (as young Students in that Art are apt to think,) but is a Point in the Horizontal Line, wherein all the Ocular Rays unite; As if ye were in a long ſtraight Gallery, where the two Sides, the Floor and Cieling ſeem to incline and touch each other in a Point or common Centre, which Point reflected on a Glaſs erected perpendicularly on the Baſe, is called the *Viſual Point*. See *Practical Perſpective*, Fol. 6.

Umbilique Points, or the 2 Focus or Centre-Points in an *Elipſis*.

Unformed Stars, Such are those that are called *Nebulæ* or Cloudy; scarce to be seen by the bare Eye or Instrument.

Unite or Unity. An Unite is the beginning of Number, and (Properly, for here we speak not of Fractions) receiveth no division in Numbers, even as a Point in Magnitudes; or thus Unity is defined by *Euclid* L. 7. *Unity is that according to which every thing of those which are, is said to be one.*

Under the Sun-Beams [*Sub Radiis, scilicet Solis,*] Is when any Planet is not fully Elongated, or distant 17 deg. from the body of the *Sun*, either before or after him; this though not so bad as Combustion, which is only till a Planet is got 8 *deg.* 30 *min.* from him, yet still 'tis an Affliction, and reckoned 4 accidental Debilities.

Void of Course, A Planet is said to be so, when he is separated from one Planet, and doth not during his being in that Sign, Apply to any other, either by Body or Aspect; This is most observed in the *Moon*; You shall seldom see a Business go handsomly forward, whilst she is so.

Umbra, A Shadow, a word oft used in the Observation of Eclipses. And also *Penumbra.*

Vortex, A Term used in Astronomy, applied to the Motion of some of the Planets, and signifies a Motion like to that of a Whirle-pool.

W

WAtch, A Sea-phraſe, ſignifying 4 Hours, they meaſure it by a Glaſs, whoſe Sand is 4 Hours a running out.

Winter Solſtice. See Solſtice.

Watry Triplicity, The Signs ſo accounted being Cold and Moiſt, are ♋, ♏ and ♓.

There are 4 Triplicities, *viz.* Fiery ♈ ♌ ♐, Earthy ♉ ♍ ♑, Airy ♊ ♎ ♒, the Fiery, Hot and Dry, the Earthy, Cold and Dry, the Airy Hot and Moiſt, *&c.*

Y

YAtch, A ſmall Veſſel, or Pleaſure-Boat.

Z

ZEnith, An *Arabick* word, ſignifying the Point in the Heavens right over ones head,, being neceſſarily 90 Degrees from the Horizon. See Nadir.

Zigiatus, Some Astrologers call every person so, that is born under *Libra*: of whom *Ptolomy* in his *Centiloquium* pronounces, *That he shall be the Cause of his own Death*; the reason of which Aphorism *Pontanus* gives; because when ♎ is Horoscopical, *Taurus* will be on the Cusp of the 8th, and both Signs being under *Venus*, therefore the party will be apt to occasion his own Death; But we know the Stars do but Incline, not Compell, and have no force upon the free will of Man, which this Aphorism would seem to Infer: more reasonable it is, to conclude these *Zigiati* (if they will call them so) for the most part do make good Poets, Musicians, Orators, *&c.* And to be of a good pleasant Humour, and delightful to Society, as well because *Libra* is the House of *Venus*, as by reason of that most benign and pleasant Star *Spica Virginis* therein, upon the Ascendant.

Zodiack, Gr. Is the Greatest Circle in the Sphear, being 12 Degrees broad, as the Ancient Astronomers thought; but the Moderns better acquainted with the Motions of ☿ and ♀ assert it to be 18, Cutting the Equinoctial into two equal parts in the midst of it is the Ecliptick, under which the *Sun* constantly moveth, leaving on each side 6 Degr. of Latitude: 'Tis called the Zodiack from the Greek word Zoon a Living Creature; because herein are the 12 Signs, which for the most part are called by their names, and represented in the shape of Living Creatures; The whole Circle is divided by the 12 Signs into 360 Degrees; 'Tis from them called *Signifer*, and often times the *Oblique Circle*.

Zones, Are certain broad Circles, Encompassing

ſing the Heavens and Earth like a Belt, or Girdle, whence the Name, [for *Zona* is Latin for a Girdle:] On the Earth, It is a ſpace contained between two Parallels, and the Ancient Geographers reckon'd them to be 5 in Number, Two Frozen, Two Temperate, and One Burning Zone, of which they Imagined only the two middlemoſt Habitable; The Two Frozen Zones, are thoſe parts of the Globe Comprehended between the North-Pole and the Artick Circle, and the South-Pole, and the Antartick Circle, which they thought could not be Inhabited by reaſon of the Extream Cold.

The *Temperate Zones*, are the ſpaces contained between the Artick Circle, and the Tropick of *Cancer* on the outſide, and the Antartick Circle, and the Tropick of *Capricorn* on the other; and between thoſe two Tropicks lay the *Torrid* or *Burning Zone*, which they fancied to be Un-inhabitable by reaſon of the Exceſſive Heat; but we have now Diſcovered their miſtakes, and find not only the Cold Countreys ſomewhat near the Pole, but the warmer Regions under the Equator, to be Plentifully Inhabited: In which laſt, notwithſtanding the *Suns* Perpendicular Rays at Noon, 'tis moſt pleaſant Living, partly by means of the Plenty of Fountains and Water, and chiefly by the Equality of the Night, and gentle Breezes continually refreſhing them about Noon.

Zetetique, Numbers uſed in Algebra and Equations by the famous *Vieta*.

AN APPENDIX,

Of Weights, Meaſures, &c.

Meaſures of Length.

THree Grains of Barley Dry and Round make an Inch; 'Tis called in Latine *Uncia*, and ſometimes in Engliſh, a Thumbs-breadth.

12 Inches make a Foot.

3 Foot a Yard, the 16*th* part whereof, *viz.* 2 Inches and ¼ is called a *Nail of a Yard.*

A Yard and a Quarter makes an *Ell*, that is to ſay, 3 Foot 9 Inches.

Five yards and an half, (that is, 16 Foot and an half) do make a *Rod*, *Pole*, or *Perch*, Statute Meaſure; But the Geometrick *Perch* or *Gad*, is 10 Foot, and in ſome places but 9 Foot.

Forty Perches in Length, and 4 in Breadth, make an *Acre* of Land; a Quarter of which, is called in ſome Places a Rood.

For all this, See the Statute 33 *Edw.* 1. *de Terris Menſurandis.*

40 Poles or Perches, make a Furlong.

8 Furlongs, *viz.* 320 Rods, make a Mile.

This is likewiſe Settled by Act of Parliament. See the Stat. 25 *Eliz.* *An Act to reſtrain New Buildings*, &c.

So

So that in an Engliſh Mile there are

320.——Rods,
5280.——Feet,
And 63360.——Inches.

A League, Is a Meaſure commonly reckoned at Sea, and Contains three ſuch Engliſh Miles as of Degrees in Heaven, is reckoned to contain 60 Engliſh Miles. See Degree.

Beſides theſe, there are ſome other Meaſures of Longitude, as

A Fingers-breadth, [called in Latin *Digitus*] containing 2 Barley Corns Length, or 4 laid ſide to ſide.

An Hand-breadth, [*Palmus*, or *Palmus Minor*] Three Inches.

A Span, [*Spithama*, or *Palmus Major*] 3 Hands-breadth; or 9 Inches.

A Cubit, Half a Yard, or 2 Spans, being Counted from the Elbow to the Top of the Middle-Finger.

A Step, [*Gradus*, or *Paſſus Minor*] Two Foot and an half.

A Stride, [*Paſſus*, or *Paſſus Major*] Two Steps, or 5 Foot; from theſe the *Romans* Counted their Mile, calling it *Milliarium*, that is *Mille paſſus*, a 1000 Paces; But our Engliſh Mile you ſee before, is 56 Paces more.

A Fathom, Six Foot.

Of Liquid Measures.

THeſe amongſt us in *England*, are varied in their Contents according to the ſeveral Liquors they are to Meaſure, As

1. For *Beer-Meaſure*, 35 Cubical Inches and a Quarter do make a *Pint*.
   Two Pints, a *Quart*.
   Two Quarts, a *Pottle*.
   Two Pottles, a *Gallon*.
   Nine Gallons, a *Firkin*.
   Two Firkins, a *Kilderkin*.
   Two Kilderkins, a *Barrel*, in which, (it appears from hence, that) there are 36 Gallons, *viz.* 144 Quarts, *viz.* 288 Pints, *viz.* 10152. Cubical Inches in a *Barrel*.
2. For *Ale-Meaſure*, the Pint, Quart, and Gallon, are as the ſame in Beer-Meaſure; But there are allowed but 8 Gallons to the Firkin, 16 to the Kilderkin, and only 32 to the Barrel; ſo that a Barrel of Ale is to hold but 128 Quarts, *viz.* 256 Pints, *viz.* 9024 Cubical Inches.
3. In *Wine-Meaſure*, there are but 29 Cubical Inches in a Pint, 2 Pints to a Quart, 4 Quarts to a Gallon, 18 Gallons to a Rundlet, three Rundlets and an half, or 63 Gallons make an Hogſhead; one Hogſhead and a third part of an Hogſhead, that is to ſay, 84 Gallons, make one Tercion of Wine, that is the third part of a Tun, a Tercion and an half,

or

or 126 Gallons makes a Pipe, or Butt, and 2 Pipes or Butts a Tun of Wine, which contains 252 Gallons, *viz.* 2016 Pints, *viz.* 58212 Cubical Inches.
A Barrel for Soap is 31 Gallons.

Dry Meaſures.

THe Gallon for Dry Meaſures as Corn, *&c.* is leſſer than the Beer and Ale Gallon, and greater than the Wine Gallon, containing 272 Cubical Inches and a Quarter, and divided into Pottles, Quarts, and Pints, as aforeſaid.
Two of theſe Gallons make a Peck.
Two Pecks a Tovet, or Half Buſhel.
Two Tovets, or 8 Gallons, a Buſhel.
4. Buſhels a Strike, or Coom.
2. Strikes a Quarter.

Of Weights.

1. Of Apothecaries Weights, and their Characters.

Thus markt.

A Grain	gr.	the leaſt Meaſure or Weight of a Barly-Corn.
A Scruple	℈	Contains 20 Grains.
A Dram	ʒ	is 3 Scruples.
An Ounce	℥	is 8 Drams,
A Pound	lb.	Contains 12 Ounces.

ſs *Semis* Half

Some

Some other things uſed by Phyſicians Chymiſts, *&c.* and their Marks.

An Handful [*Manipulus*] thus noted—M.

A Pugil being as much of Herbs or the like; as can be taken up at once between 2 Fingers and ones Thumb, is thus marked—P.

Ana [that is as much as to ſay of Each] A. or Ana.

Recipe, Take thou—℞
Semiſſis [half] ſs.
Tartar ——— ♀
Sal ——— ⦶
Sulphur ——— 🜍
Antimony ——— ♁
Vitriol ——— ⊖

Our other Common Weights are Two-fold.

1. *Troy Weight*, whereby Bread, Gold, Silver, Apothecaries wares, as aforeſaid, *&c.* are weighed: Containing only 12 *Ounces* in the pound, Each ounce 20 *Penny-Weight*, Each penny-weight 24 *Grains*. This ſeems to have been the Ancienteſt Weights by its Name, as derived from the Famous City of *Troy*, from whence *Brute* and his People are ſaid to have deſcended, and to have Called *London*, *Troy-Novant*, or *New-Troy*: which whether true or fabulous, yet it may be a good Argument, that this ſort of Weight, is at leaſt of very ancient uſe amongſt us.

2. The

2. The ſecond and more common Weight, is called *Averdupois*, which being *French*, is in Engliſh, *Have your weight*; ſignifying to be a fuller and larger Weight than the other, for it Contains 16 *Ounces*, or 128 *Drams*, viz. 384 *Scruples*, viz. 7680 *Grains*: by this, is weighed all kinds of Grocery ware, and inferior Mettals, as Iron, Copper, and Braſs, as alſo Hemp, Flax, Roſin, Pitch, Tarr, *&c.*

A *Great Hundred* is not exactly what it ſeems to be by the word, but 112 *l.* ſo the Half Hundred 56 pounds, the Quartern 28, and the Half Quartern 14 pounds.

Wooll Weights.

A *Stone* 14 pounds.
A *Tod* 20 pounds.
A *Sack* is 26 ſtone, that is 364 pounds.

Cheeſe Weights.

A *Clove* of Cheeſe is 8 pound.

A *Wey* of Cheeſe 32 Cloves, that is 256 pounds, *viz.* Twelveſcore and 16 pound.

And ſo much weigheth the the Wey of *Suffolk* Cheeſe, and the like is, or ſhould be, the Barrel of *Suffolk* Butter.

But the *Wey* of *Eſſex* Cheeſe is but ſixſcore and ſixteen pounds, and their Barrel of Butter the ſame.

Herrings are allow'd 120 to the Hundred, and ten Thouſand of them are called *A Laſt*.

Characters

Characters in Astronomy.

The Planets,		*The Signs*	
Saturn	♄	Aries	♈
Jupiter	♃	Taurus	♉
Mars	♂	Gemini	♊
Sol	☉	Cancer	♋
Venus	♀	Leo	♌
Mercury	☿	Virgo	♍
Luna	☾	Libra	♎
		Scorpio	♏
		Sagittarius	♐
		Capricorn	♑
		Aquarius	♒
		Pisces	♓

The Dragons Head ☊
The Dragons Tail ☋
Part of Fortune ⊕

The Aspects New and Old.

Names.	*Characters.*	*Distance.*	
		S	D
Conjunction	☌	0	00
Vigintile	Vig	0	18
Quindecile	Qd	0	24
Semisextile	ss	1	00
Decile or Semiquintile	Dec	1	06
Semiquadrate, Octile or Sesquadrate	sq	1	15
Sextile, Hexagone	⚹	2	00
Quintile	Q	2	12
Quadrate, Square, or Quartile	□	3	00
Tredecile, or Sesquiquintile	Td	3	18
Trine	△	4	0
Sesquiquadrate	Ssq	4	15

Biquintile

Biquintile	Bq	4	24
Quincunx, or Quadrafextile	Vc	5	00
Oppofition	☍	6	00

G. or Gr. in Latine, Degrees, or the 30. part and D. or Dr. in Engliſh, of a Sign. See Degree.

M. Minutes ' thus markt, or the 60th part of a Degree.

S. or Seconds " thus markt, or the 60th part of a Minute.

Thirds thus markt ‴ the 60th part of a Second, and ſo on to Fourths, &c.

R. Retrograde; Dir. Direct, Or. Oriental, Occ. Occidental, M. A. Meridional or South-Aſcending, M. D. South-Deſcending, S. A. Septentrional or North-Aſcending, S. D. North-Deſcending.

Signs,

Signs, or Symbols *now commonly used by some Algebraical Writers.*

= Is the Sign of Equation, and signifies Equal to. As A=B. Is A. equal to B.

> Is the Sign of Majority, and signifies Greater than, As A>B. Is A greater than B.

< Is the Sign of Minority, or Lesser than, As A<B. Is A Lesser than B.

\+ Is the Sign of Addition, and signifies more As +A +B. Is more A. more B. yet sometimes the Sign of the foremost Quantity is left out, As A+B=A+B, That is more A. more B. Is equal to more A more B.

— Is the Sign of Substraction, and signifies Less, As A —B. Is A less B

× Is the Sign of Multiplication, and signifies Multiplied by, As A × B. Is A multiplied by B.

The Signs of Division is a Line drawn Level between two or more Quantities, As

$$\frac{A+B-C}{D}$$

which is thus to be read, A more B. less C. Divided by D. or sometimes

times thus D) A + B — C. that is, D. Dividing A more B. leſs C.

∴ Is the Sign of Continuation, As A, B, C, D, E, ∴. ſhows that theſe Quantities are in Continual Proportion.

:: Is the Sign of Interruption, and denotes the middle of 4 Proportionals interrupted, As A. B. :: Y. Z. Is thus read As A. to B. ſo is Y. to Z.

( ) A Parentheſis, with a power note in it, ſignifies Involution: As A, — B. (2) Is the ſquare of A. leſs B. or A — B. (3) Is the Cube of A. leſs B.

√ A Radical Sign with an Index in it, ſignifies Evolution, as $\sqrt[2]{}$ A — B. Is the Square Root of A leſs B. or, $\sqrt[3]{}$: A — B : Is the Cube Root of A leſs B. But through an Irregular Cuſtome √, is uſually taken for a Square Root.

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